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ON THE  
WEAPONS, ARMY ORGANISATION,  
AND POLITICAL MAXIMS

OF THE  
4693<sup>6</sup>  
ANCIENT HINDUS,

WITH SPECIAL REFERENCE TO GUNPOWDER  
AND FIREARMS.

BY

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## PREFACE

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WHILE pursuing my researches into ancient Indian history I lighted upon two ancient Sanskrit manuscripts containing interesting information on many new and important topics.

One of them, the *Nitiprakāśika*, has been, I believe, up to now, utterly unknown, and the other, the *Śukranīti*, though known to exist, has never been properly described and published.

The *Nitiprakāśika* is ascribed to Vaiśampāyana and gives among other valuable matter a full account of the Dhanur-veda. It contains in fact the only accurate description which we possess of the various arms and war implements of the ancient Hindus. I esteemed it therefore proper to give as many passages as possible in full, though well aware I run the risk of tiring the reader by a long enumeration of weapons.

The chapter taken out of the *Śukranīti*, on the other hand, abounds with useful and interesting information, all the more worthy of being communicated, as it enters into subjects connected with war and politics from a truly Indian standpoint, which may perhaps command additional attention now that a war is being waged within the north-western boundaries of ancient India.

The organisation of the ancient Indian armies is well and clearly described in its outlines; the division of the army into a veteran reserve and young line-troops is remarkable. The same can be said of the laws according to which war ought to be conducted. The maxims of the Dharmayuddha recall to our memory the laws of chivalry existing during

the Middle-ages, and the former like the latter seem only to have been followed when it appeared convenient to do so; for some of the most renowned Indian heroes, as Rāma and Kṛṣṇa, are credited with having stooped at times to mean and treacherous acts, in order to gain victory. In recent times we have witnessed a revival of this humane feeling, in the outcry which was raised against explosive bullets and in the Geneva Convention, which was instituted to mitigate the horrors of war.

It is of peculiar interest that the statements found in these two ancient works tally with the few remarks on Indian army organisation which we glean from the fragments of ancient Greek and Roman writers.

The Nitiprakāśikā and the Śukranīti, while testifying to a high civilisation prevailing in ancient India, cast also some light on the recension of such works as the Mahābhārata and the Mānavadharmaśāstra.

The difficult and intricate question about the ancient home of gunpowder and firearms, I trust to have finally settled.

I may close with the remark that this book should only be considered as an occasional offshoot of my studies in Indian history, and as nothing more.

GUSTAV OPPERT.

MADRAS, 23rd August 1880.

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ON THE WEAPONS,  
ARMY ORGANISATION AND POLITICAL  
MAXIMS OF THE ANCIENT HINDUS,  
WITH SPECIAL REFERENCE  
TO GUNPOWDER AND FIREARMS

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CHAPTER L

ON THE WEAPONS AND WAR IMPLEMENTS OF THE ANCIENT  
HINDUS.

OUR knowledge of the history of the ancient Hindus is very limited, and there is not much hope of our becoming better informed, as the most important factor for providing such knowledge, i.e., a historical literature or a sufficient number of authentic records is not existing in India, in fact seems never to have existed. While we possess ample material to reconstruct to some extent the history of the ancient Egyptians, Assyrians, Hebrews, Persians or Greeks, the Hindus have left us no sufficiently trustworthy records of the past, to enable us to do the same with respect to Indian history, that has been done to the history of other ancient nations.

The combined influences of climate, geographical position, political circumstances, education, religious belief, and habit have conspired to destroy any taste for historical researches, even if such had existed formerly. Internecine wars, all the more cruelly conducted, as they severed the links of previous relationship and friendship, either undertaken for the sake of

political or religious supremacy, and continual invasions of foreigners unsettling entirely all domestic affairs and civic arrangements could not excite so great an interest as to be remembered with care and committed to posterity by recording them. Nobody likes to remember saddening occurrences, and a few bright spots excepted, the political history of India reveals one of the most dismal pictures of human existence.

Moreover the exalted position in the social ladder which a Brahman occupies in his own estimation, does not induce him to interest himself in the worldly fate of others. Every Brahman regards himself as a descendant of one of the great divine sages, and obtains, if pious, final beatitude through this descent. To ensure it he has to remember and to revere the memory of his three immediate predecessors—father, grandfather, and great-grandfather; and, as every previous ancestor has observed the same practice, he is in his mind certain of his ultimate prosperity. Why should he, therefore, engage himself in the investigation of a subject in which he is not interested and which can confer on him no benefit?

The subject of Indian history is a very difficult one, not only from the absence of trustworthy ancient records, but also from the necessity—and in this respect it resembles all Asiatic history—that the historian should be an Orientalist. Historical science is strictly allied to, and dependent on, philological science, and without a knowledge of the mother tongue of a nation, or, at all events of the languages in which the original and most important sources of its history are recorded, no person is competent to undertake to write the history of a nation, for, being unable to read the original records himself, first, he is not able to judge them critically; and, secondly, it is beyond his power to detect any mistakes made by translators. Were all reports true and all translations correct, the drudgery and anxiety of a historian would be

considerably reduced, but reports and translations which fulfil these requirements are still a *desideratum*.<sup>1</sup>

The two great epics and the purāṇas are the works which mainly represent the historical branch of Indian literature. But woe betide him who would look up to them as authentic and trustworthy sources. However important and interesting in many other respects, historical accuracy is not a quality they aim at; for they are rather a depository of legendary myths, which are enlarged by an imagination morbidly fond of wonders. Nevertheless they must not be quite thrown away as useless, for they may contain here and there some grains of historical truth, as a rock may contain some dispersed grains of gold, though they can with difficulty only be separated from their less precious surroundings. Besides the epics and purāṇas, the law books make sometimes occasional remarks which throw light on historical subjects; they together with the works on polity allow us merely an insight into the manners and customs of the old Hindus; and in this respect they are of the highest importance. In the following pages we shall discuss the customs of the ancient Indians so far as they bear on the nature of their arms. Two ancient Sanskrit works, the *Nitiprakāśika* of Vaiśampāyana and the *Śukranīti* of Uśanas or Śukracarya, are in my possession which contain important, and up to the present generally unknown information on this subject, which I hope will be of interest to the reader.

<sup>1</sup> Yet in this time of literary upholstery people desirous of gaining literary success often overlook these facts so evident to all outsiders. A sad example of labor thus thrown away and of much patient research so fruitlessly spent, is the voluminous history of the Mongols, in the preface of the first volume of which the author, Mr. Henry H. Howorth, says that he approaches 'the problem as an ethnologist and historian and not as a linguist,' and that he had 'no access to the authorities in their original language, and only to translations and commentaries.' This confession, however honest, need not have been made, as the work itself throughout suggests by its defects the want of linguistic attainments which for a writer on oriental history is a *conditio sine qua non*.

The Nitiprakāśika is an extract from a larger work devoted to the Nitiśāstra,<sup>2</sup> which is ascribed to Vaiśampayana, the same to whom the Yajurveda is assigned, and who recited the contents of the Mahabharata to Janamejaya, the great-grandson of Arjuna, the son of Pāṇḍu. Vaisampayana is introduced in the Nitiprakāśika as communicating at Takṣaśila in the Panjab to the same king Janamejaya the nature of the Dhanurveda, the peculiarity of the weapons and of all the matter connected with war and the administration of the kingdom. The Nitiprakāśika is divided into eight books, the first five speak about the Dhanurveda and weapons in general, the sixth and seventh contain remarks on the divisions and constitution of an army, and the eighth on different subjects connected with the royal prerogative and the duties of subjects.

Horace Hayman Wilson, the eminent Sanskrit scholar, has devoted a special article to "the art of war as known to the Hindus;" but this excellent essay was written many years ago and does not enter deeply into the question of gunpowder and firearms, which is particularly commented upon in the following lines.

The smallest unit of the Indian army, a *patti*, is described to consist of 1 chariot, 1 elephant, 3 horses, and 5 men. The *Sendāmukha*, *Gulma*, *Gāga*, *Vāhiṇī*, *Pṛtanā*, *Camū*, and *Anikini* are respectively three times as big as the corps preceding them, and the 9th formation, which was called *Aksauhiṇī* and was considered to represent a complete army, was ten times as numerous as the preceding *Anikini*.<sup>3</sup> The Nitiprakāśika, after describing the original *patti*, goes on to say that a chariot has a retinue of 10 elephants, 100 horses, and 1,000 men;

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<sup>2</sup> I hope soon to obtain a copy of this work, as it is in the library of one of my native friends. It is perhaps the work alluded to in the following words contained in the Āśvalāyana Grhya: "Sumantu-Jaimini-Vaiśampayana-Pūla-sotrabhāshya-bhārata-mahabharata-dharmaśāryah."

<sup>3</sup> Amarakośa, II, viii, 48 and 49; Nitiprakāśika, vii, 5. "Eko ratho gajasaiko narth yañen hayah trayaḥ."

an elephant one of 100 horses and 1,000 men; a horse one of 1,000 soldiers, and that a foot soldier had ten followers.<sup>4</sup>

According to the first mentioned scale the different corps would have the following strength :—

Army Corps.	Chariot.	Elephant.	Horse.	Foot.
Patti	.. .. ..	1	1	3
Senamukha	.. ..	3	3	9
Gulma	.. .. ..	9	9	27
Gana	.. .. ..	27	27	81
Vahini	.. .. ..	81	81	243
Prtaka	.. .. ..	243	243	729
Cama	.. .. ..	729	729	2,187
Antikini	.. .. ..	2,187	2,187	6,561
Aksauhiṇi	.. .. ..	21,870	21,870	65,610
				109,380

According to the second estimate one chariot alone demands an extraordinary number of supporters. And indeed the Nitiprakāśika lays down that the various army corps should have the following constitution<sup>5</sup> :—

Army Corps.	Chariot.	Elephant.	Horse.	Foot.
Patti	.. .. ..	1	10	1,000
Senamukha	.. ..	3	30	3,000
Gulma	.. .. ..	9	90	9,000
Gana	.. .. ..	27	270	27,000
Vahini	.. .. ..	81	810	81,000
Prtaka	.. .. ..	243	2,430	24,300
Cama	.. .. ..	729	7,290	72,900
Antikini	.. .. ..	2,187	21,870	2,187,000
Aksauhiṇi	.. .. ..	21,870	218,700	2,187,000,000

<sup>4</sup> Nitiprakāśika vii, 6-8.

5. Naga dada rathasyasya datam avasahinugrah  
sahasram tu narab proktah parivara nippajdaya.

7. Ekasyaikasya nagaasya datam svabh pratyayinah  
padatayah sahasram tu pratyangodvanusayinah.

8. Ekasyaikasya cāvasya sahasram tu padatayah  
data caittā patti yuktivā kartanena gapanā tviyam.

<sup>5</sup> Nitiprakāśika, vii, 9-11, 27-30.

9. Eko ratho data gajah sahasram cātra vajinah  
lakṣasankhya narab pattieveram agre'pi yojanā.

The Hindu delights in large numbers, and to this propensity must be ascribed this exorbitant calculation. The population of the whole earth is generally assumed to amount to 1,075,000,000 souls, and in the Nitiprakasika we are told that a complete army requires a number of men, which surpasses by more than a half the number of all the inhabitants of this globe.

The Śukranīti gives a much more sensible distribution. According to that work the aggregate of the military unit would be 5 chariots, 10 elephants, 40 camels, 64 bulls, 320 horses, and 1,280 men.<sup>4</sup>

The formation of an army into different columns is a subject to which great attention was paid. Four different kinds of such columns or *vṛithas* are enumerated—the *Dasya*, *Bhoga*, *Aśamhata*, and *Mandala*; the first had 17 varieties, the second 5, the third 6, and the fourth 2. Besides these, five most important columns were not enrolled in any of these four sets; they were called *Varāha*, *Makara*, *Garuda*, *Krauñca*, and *Padma*.<sup>5</sup>

10. Pratyanigrastrigrahanīḥ sarvaiḥ kramat akhyā yathottaram  
antkinim dasagunam shurakṣashintuḥ budhah.
11. Sesamukho tu gupitah trayasāiva ratha gaṇīḥ  
trīmāst trikṣupadatāḥ triśaṣṭaram hi vajināḥ : &c., &c.
27. Akṣuṇihigyam tvekaṁṣṭihaṣṭaḥāraṇi janādhipa  
tatha cāṣṭaṭam caiva saptatiṁ rathagāna viduh.
28. Aṣṭaduṣṭasahasraṇi dve lakaṣe ca narotvara  
tatha saptasāṭam caiva gujanam gagana tviyam.
29. Dve koṭi caiva lakaṣāṇam aṣṭaśāṣṭa mahispate  
tatha saptatiṁ haṣṭaḥ gandharvāśūḍhrayayināḥ.
30. Dve cārbude ca koṭisāpyaṣṭaduṣṭasāṣṭiḥ  
lakaṣāṇam saptaśiṣṭalva padatīnam itiyāḥ.

<sup>4</sup> See Śukranīti, Chapter V, slokas 20, 21.

<sup>5</sup> See Nitiprakasika, vi, 3-9.

3. Daso bhago'śamhataṣaḥ mandalavyoḥa eva ca  
vyohāśicatvāra evaite teṣu bhedan bravīmyaham.
4. Prādāro dṛḍhakṣassatyanicāpibhūṣavakṣipreva ca  
suṣṭutis̄hō'pratiṣṭhasaḥ syeno vijayasūlijayau.

All these troops were commanded by generals, whose rank depended upon the number of troops under their orders. The ministers of the king held mostly also the office of generals.

All the soldiers, from the private to the commander-in-chief, received their pay regularly every month. The crown-prince, who was generally the next in command to the king, received every month 5,000 varvas, or gold coins ;<sup>\*</sup> the commander-in-chief drew 4,000 varvas ; the atratha, the first charioteer, who was usually a royal prince, received 3,000 varvas ; the mahāratha 2,000 varvas; the rathika and the gajayodhi, 1,000 varvas each ; the ardharatha 500 varvas ; the ekaratha (commander of a chariot), and the leader of an elephant got each 300 niśkas. The general commanding all the cavalry obtained 3,000 niśkas ; the general in command of the whole infantry received 2,000 niśkas. An officer commanding 1,000 men of infantry got 500 niśkas ; an officer who led the same number of troopers received 1,000 niśkas ;

5. Viśālovijayaḥ sācti sthūṇo karṇasamutimukhaḥ  
mukhasyovijayaśceti dandasaptadasaṁnakah.
6. Gomūtrika hanūlka ca sañcīrī śūkṣṇāstatha  
evam karapatiṣṭiti bhogabhedastu pātīca vā.
7. Ardhasandrankṣṭaddhāro vajratāksa(jakastathā)  
śṛṅgi ca kākupādīca godhiketyaparamūrtih.
8. Asvīshatāḥ śudividhassyit ityakururyāhakovidāḥ  
survabhadro durjayāśca manḍalopī dvīdha iti.
9. Vārahi mākaravyno gārudāḥ krauñca eva ca  
podmadyaścangavaikalyat eṭebhyaste prthak smṛtah.

\* The value of the varva, which is an ancient coin, is difficult to determine. In the Nīliprakāśa, VI, 89–101, the rewards which are to be given to soldiers who kill a king, a crown-prince, a commander-in-chief, a leader of an Akṣauhiṇī, a councilor, and a minister, &c., &c., are also fixed in varvas.

89. Dadyat prahr̄ṣṭo niyutam varvāṇām rajśghetine  
tadardhantatastavadvāhe senāpativadvāhe tathā.

90. Aleṣubhipativadvāhe tadardham paricakṣate  
mantryasmatyavadvāhe caiva tadardham tu pradāpayet, &c., &c.

Sloka 89 is also found in the Kāmandakiya, XIX, 18, having been most probably taken from this work of Vaiśāṇījāyāna.

an officer who had 100 small patti under his command and who must ride on a horse drew only 7 varvas, while a private got 5 suvarpas.

The following fourteen persons got only each 15 varvas a month :—1, an elephant driver ; 2, a charioteer ; 3, an ensign-bearer ; 4, a superintendent of wheels ; 5, an officer in command of 300 men of infantry ; 6, a camel-express ; 7, a messenger ; 8, the head gate-keeper ; 9, the chief-bard ; 10, the chief-singer ; 11, the chief panegyrist ; 12, the head store-keeper ; 13, the army paymaster, and 14, the muster master.<sup>9</sup> The Śukrānti contains another scale of salaries.<sup>10</sup>

If this scale of salaries is correct and if the salaries were really paid, one would feel inclined to think, that an extensive gold currency existed in ancient India.

Armour was worn by the warriors, and even elephants and horses were similarly protected.

The description of the weapons which follows in this chapter is mainly taken from the Nitiprakāśikā.

<sup>9</sup> See Nitiprakāśikā, VII, 33-42.

33. Yuvarājya varvānam pañcasahasraki bhṛtiḥ  
sarvaseṇapratre ca catussahasrakī ca et.
34. Bhṛtiścitrirūpa deya varvānam triasahasrakam  
māharathaya sahaśradvayam rājādhimāsakam.
35. Vētanam rāthikātyātha sahaśram gajayodhine  
dadyat ardhārathāyātha vētanam śatapañcakam.
36. Etsamai rāthikātyātha tādrīcō gajasadine  
niṣkāpām triśatam dadyat yatastan tatkuṭumbinā.
37. Sarvāvadhīpali rājāstṛisahaśram sa cārhati  
pedatiśdhipatīcāpi dvisaḥasraśaya bhājanām.
38. Padatānam sahaśraśaya netre pañcasatam amṛtam  
tatha cāvānaśaśreśo sahaśram vētanam bhavet.
39. Śatapañcyadhipe saptā varvānam hayayātine  
padataye svarvāpnām pañcasatam vētanam bhavet.
40. Gajayantusarārathēca dhvajine cakrapāya ca  
pedatiśrītateṣṭaya pathikoṣṭracaraya ca.
41. Vartikādhipatīcāpi vētriām pataye tathā  
śatamāgadhaśvandinām patayo vivadhdhīpe.
42. Senāya bhṛtiśātre ca bhājanām guṇaspere  
maisi maasi tu varvānam dātāpācī ca vētanam.

<sup>10</sup> See Śukrānti, Chapter V, 41. 23-28.

The Hindu is fond of connecting everything, even the most material substance, with some metaphysical cause. We must not be surprised, therefore, if weapons and arms do not make an exception to this rule.

A supernatural origin is ascribed to all armour. The primeval Dakṣa had two daughters—Jaya and Suprabha—who were given in marriage to Kṛṣṇa, the mind-begotten son of Brahma. Jaya became, according to a promise of Brahma, the mother of all weapons and missiles, while her sister Suprabha brought forth at first ten sons who were called Samhāras *restraining spells*; and afterwards through the special favor of Brahma an eleventh son, Sarvamocana (releaser of all), was born.<sup>11</sup>

The knowledge of everything connected with weapons and arms is confined to the Dhanurveda, i.e., the knowledge of the bow, and he only, who is well acquainted with this Veda, can hope to conquer his foes. The Dhanurveda is one of the four Upavedas. Even the gods had originally no intimate acquaintance with the precepts of the Dhanurveda, and this deficiency was one of the causes why they were at one time totally defeated by the demons or asuras. Eventually the gods were instructed in the mysteries of the Dhanurveda; and this Veda was communicated to Pṛthu by Brahma himself.

The Dhanurveda when personified is credited with possessing four feet, eight arms, and three eyes, and Sankhyayana is mentioned as the head of his Gotra or race. In his four arms on the right he holds a thunderbolt (*vajra*),

<sup>11</sup> See Nitiprakasika, I, 46-47; II, 38.

45. Kṛṣṇo manasaḥ putro dve jaye tasya sammate  
jaya ca suprabha caiva dākṣayanye mahesmati.
46. Jaya labdhavra maiti (e) āstrañyāstrañyasyāsta val  
pascat dāsa parā capi tāvat putrān ajijanat.
47. Samhāra nāmadurdhārān durākrīmān balyasāḥ  
mantradaivatasamhyogāt śāstrāgyasāstravām āpnuvan.
38. Sarvamocanānta tu suprabhātanayo mahān  
muktānukta khalasamo madvarat (e) prathitāḥ paraḥ.  
(e) Brahma speaks here himself.

a sword (*khadga*), a bow (*dhanu*), and a discus (*cakra*) ; in his four arms on the left are a hundred-killer (*śataghni*), a club (*gaddī*), a spear (*sīla*), and a battle axe (*pattiśa*). His crest is provided with charms ; his body is polity ; his armour is a spell ; his heart represents withdrawing spells ; his two earrings are the weapons and missiles ; his ornaments are the various war movements ; his eyes are yellow ; he is girt with the garland of victory, and he rides on a bull.<sup>12</sup>

The spell which effects the destruction of one's enemies and which grants victory is as follows : *Om namo bhagavate dham dhanurvedāya mān rakṣa rakṣa mama śatrūn bhakṣaya bhakṣaya hum paṭ svā hā* ; i.e., "Om salutation to the dham dhanurveda, protect, protect me, devour, devour my enemies hum paṭ svā hā." If these 32 syllables are 32,000 times repeated the supplication will be successful.<sup>13</sup>

The arms are divided, according to their nature, into *mukta* or those which are thrown, *amukta* or those which are not thrown, *muktāmukta* or those which are either thrown or not thrown, and into *mantramukta* or those which are thrown by

<sup>12</sup> See *Nīlprakāśikā*, II, 1-4.

1. Cateyyaco dhanurvedo raktaśaṁpaśaturnaukhaḥ  
aśabhustrintraśca sākhyayanaśgotravān.
2. Vajram khadgo dhanusākram dakeśabahucauṣṭayē  
śataghnicā gadaśūlapaṭṭis vāmabahuśu.
3. Prayogakośirayato nityaśgo mantrakaścukah  
upasamharaḥdayaśastrastrobhayakundalah.
4. Anekavalgitakarshṇapāb pīṅgaleśāpāb  
jayanālāparivṛto vṛṣṭādāma ucyate.

<sup>13</sup> See *Ibidem*, II, 5-9.

5. Etamantram pravakṣyam vairijalanikṛntanam  
atmasainyavapakṣapām āmanāśabhirakṣakam.
6. Aduṇ prapavam uocārya na ma ityakṣare tataḥ  
vateti bhagapūrvam dham dhanurvedāya cocaret.
7. Mām rakṣa rakṣetuccārya māmā śatrūn atho vadet  
bhakṣayeti dviruccārya hum paṭ svā hetyathocaret.
8. Aham evam rīḍicāya gāyatrī chaeda ucyate  
mahesvara devatātva viniyogo'niṣigrhe.
9. Dvātrīṁśadvargakṣemānum varpaśākhyāśahasrakaiḥ  
japitva siddhim ēpnoti ripaścāpyadhitishthati.

The expression *ātme dhanurveda* is formed in the same way as *Rom Rām*, *Vine Pūjācara*, &c.

spells.<sup>14</sup> This classification is more theoretical than practical, as it is not strictly followed. The gods can, moreover through the application of spells, turn all weapons into projectiles.<sup>15</sup>

The Agnipurāṇa arranges the weapons in five classes, into 1, those thrown by machines, *yantramukta*; 2, those thrown by the hand, *pāṇimukta*; 3, those thrown and drawn back, *muktasandhārita*; 4, those which are not thrown, *amukta*; and, 5, the weapons which the body provides for the personal struggle, the *bādhuyuddha*.<sup>16</sup> Other classifications besides these exist, but the difference between them is not essential.

Twelve projectiles and projectile weapons constitute the division of the *mukta* or thrown weapons.

1. The *dhanu* (bow) is personified as a being which has a broad neck, a small face, a slender waist, and a strong back. He is four cubits in height, and bent in three places. He has a long tongue, and his mouth has terrible tusks; his color is that of blood, and he makes always a gurgling noise. He is covered with garlands of entrails, and licks continually with his tongue the two corners of his mouth.<sup>17</sup>

According to the rules laid down in the Dhanurveda the bow should be bent by the left hand, the bowstring should be taken by the right hand, and the arrow be placed on the

<sup>14</sup> See Ibidem, II, 11-13.

11. Muktam caivā hyamuktam ca muktamuktam atah param  
mantramuktam ca catvari dhanurvedapadani val.

12. Muktam bhasadi vijñeyum kharigdikam amuktakam  
sopasamhātrum astram tu muktiāmuktam uishareti.

13. Upasamhātarahitam mantram uktam ihocyste  
caturbhirebbhī padaśita dhanurvedah prakāsite.

<sup>15</sup> See Ibidem I, 47 b, note 11.

<sup>16</sup> See Agnipurāṇa (Dhanurveda) 148, 2.

Yantramuktam pāṇimuktam muktasandhāritam tatha  
amuktam bahuyuddham ca pañcadha tat prakīrtitam.

<sup>17</sup> See Nitiprakāśika, II, 17; and IV, 8, 9.

8. Prithugrīvam vikṛmatirāḥ tanumadhyam supṝshat  
catuṣkākṣprāntūdakam tripatam dirghajihvakam.

9. Darshakarālvadanam raktabhām ghargharavananam  
Antramālāparikṣiptam lelihanam ca sp̄kvāt.

thumb and between the fingers of the bowhand on the back of the bow.<sup>18</sup>

The length of the bow, and consequently also of the arrow, varies. Two strings are generally fixed to a bow, and the archer wears on his left arm a leather protection against the bowstring, and a quiver on his back. Those well skilled in archery distinguish fourteen different movements which can be made when using the bow. In the Agnipurāṇa the bow is declared to be the best weapon.

In the law book of Manu we read, that one Bowman placed on a wall can fight a hundred men, and that a hundred archers can fight ten thousand; therefore a fort is recommended. In the Śukranīti occurs the same verse but instead of the word for bow *dhanu* that for a missile *astva* is given, which imparts a wider meaning to the sentence, especially if it is taken to allude to firearms, unless *dhanu* itself stands for missile in general.<sup>19</sup>

<sup>18</sup> Ibidem, II, 17; and IV, 11-14.

11. Dhanurvedavidhānena nāmya vāmakareṇa tat  
dakṣinena jyaya yoju pṛṣṭha madhye prāgrhya tat.  
12. Vāmāṅgultham tāludare pṛṣṭhe tu cstrafragulth  
pūtakhamadhye jyaya yoju svāgulvivareṇa tu.  
13. Ākārṇam tu samākṛṣṇa dṛṣṭim lakṣye vivesya ca  
lakṣyat anyad apākyanta kṛta-pūtakhaḥ prayogavit.  
14. Yadā muśleṣa daram vīdhye kṛta-hastātadocaye  
evam bāpāḥ pravoktavyāḥ hyatmārakṣyāḥ prayatnatāḥ.

<sup>19</sup> See Nitiprakāśika, II, 17, and IV, 18-20.

18. Lakṣyasya pratīsandhānam ākārṇavikarṣane  
paryākarṣṇaukaraṣauca mandāltikaranam tatha.

19. Pūrṇam sthārṣṭam caiva dhananam bhramanam tatha  
asannadīrapātāuca pṛṣṭhamadhyenapātane.

20. Etāni vṛgītānyāhuścaturdasa-dhanurvidāḥ.

Compare Śukranīti, Chapter V, sl. 152; Agnipurāṇa, 148, 6-37; 149, 1-19.

See Manu, VII, 74, (Hitopadeśa, III, 50 Pañcatantra, I, 252).

74. Ekaḥ sātām yodhayati prakāratho dhanurdharah.

sātām dāsa sahasrāṇi tasmāt durgam vidiṣyate.  
and compare these verses with Śukranīti, IV, VI, 10.

10. Ekaḥ sātām yodhayati durguṣṭho strīdharo yadi

sātām dāsa-saḥasraṇi tasmāt durgam samāśrayet.

2. The *isu* (arrow) has a dark large body; is three cubits long, an *añjali* (*i.e.*, the hollow of the two hands) in circumference and goes very far; two movements are ascribed to the arrow.<sup>20</sup>

3. The *bhīndicāla* or *bhīndipūla* (crooked club) has a crooked body; its head, which is bent and broad, is a cubit long, and it is a hand in circumference. It is first whirled thrice and then thrown against the foot of the enemy. When throwing the *bhīndivala*, the left foot should be placed in front.<sup>21</sup>

4. The *sakti* (spear) is represented as being two cubits long, with a steady sideway movement. It has a sharp tongue, a horrible claw, and makes a sound like a bell. It has an open mouth, is very dark, and is colored with the blood of the enemy. It is covered with garlands of entrails; has the mouth of a lion, and is fearful to look at. It is as broad as a fist and goes very far. It must be taken up and thrown with two hands. Its movements are of six kinds.<sup>22</sup>

<sup>20</sup> See Ibidem, I, 17; and IV, 28, 29.

21. *Iṣṇurṇilabhyaldeho dvīhastotsedhasenkyutah  
paridhīya cañjalimito'nalpamātragatistu sah.*

22. *Bhrāmanām kṣepanām ceti dve gatti atholamannate.*  
Compare Śukrānti, Chapter V, 41. 152.

<sup>21</sup> See Ibidem, I, 17, and IV, 30, 31.

30. *Bhīndivalastu vakraṅgo naṣṭraṅgo bhīacchīrāḥ  
hastamātrotseḍhayuktāḥ karasmāmitamaṇḍalaḥ*

31. *Tribhramanām visurgāśca vānapādāpumāsaran  
padāghatāt ripahānō dharyāḥ padātāmāṇḍalaḥ.*

Compare Agnipurāṇa, 161, 15.

<sup>22</sup> See Ibidem, I, 17, and IV, 32-35.

32. *Śaktihastadvayotsedha tiryaggatiranākula  
tikṣṇajihvogranashākhā ghaṇṭāṇḍabhayaśākuta.*

33. *Vyaditasyatiṁlāca ātrēśoṇītarañjita  
ātramālaśarīkiptā simbhāya ghoradarśna.*

34. *Bhītārurūḍragāma parvatendravidāśript  
bhujadvyasprerantya yuddhe jayavidhāyint.*

35. *Tolaṇam bhrāmanām caiva valgāṇam nāmanām tatha  
močanām bhodanām eti pañmārgaśāktisāharītaḥ.*

5. The *drughvina* (hatchet) has an iron body, a crooked neck, and a brawl head. It is 50 angulas long and a fist in circumference. Four movements are peculiar to it.<sup>23</sup>

6. The *tomara* (tomahawk) has a wooden body and a metal head formed like a bunch of flowers. It is three cubits long, has a red color, and is not crooked. It is moved in three ways.<sup>24</sup>

7. The *nalika* (musket) has a straight body, is thin-limbed, and hollow in the middle. It pierces the vital parts, is dark, and discharges the missiles of the Dronicāpa. When it is to be used, it is taken up, ignited, and pierces the mark. These are the three actions connected with the nalikā.

It seems to have been a small-sized gun, a sort of carbine, as it is only described as effective against enemies standing near.<sup>25</sup>

8. The *laguda* (club) is described as having a small foot, a broad shoulder, and a broad head. The foot part is surrounded with metal. It is small and very broad. It has the

<sup>23</sup> Ibidem, II. 17; IV. 36, 37.

36. Drughapastvayassāṅgasyat vakragrīva bhāschirāḥ  
paścasāt aṅgulyaśaedho muṣjāmenitamāṇḍalāḥ.

37. Unnāmanām praptām ca sphoṭanām dārajan tatha  
catvāryetāni drughape valgitāni śritāni vai.

<sup>24</sup> Ibidem, II. 17; IV. 38, 39.

38. Tomarāḥ kāśhaktyasyat lohaśrāḥ aṅguśchavān  
hastatravonntāṅgaśca raktavarpantvavakragaḥ.

39. Uddhanām vinivr̥tiśca vedhanām oti tattrikām  
valgitām īastratattvajñāḥ kathayanti naradhipāḥ.  
*Compare Agniparāpa*, 151, 10.

<sup>25</sup> Ibidem, II. 17; IV. 40, 41.

40. Nalika r̥judeha syat tanvāṅgi madhyarandhrika  
maṁmacechedakārt nīla dromicāpasareśi.

41. Grahasam dhūmāpanām osīva syātām ośi gatiśrayam  
tām śritām vidiṭvā ta jettānanānā ripūn yudhi.

Mallinātha uses the expression *dromicāpa* in his commentary to *Nāipadha*, II, 28. *Compare p. 68.*

shape of a tooth. It has a hard body and is two cubits high. Its movements are of four kinds.<sup>26</sup>

9. The *pāśa* (lasso) is composed of very small scales, made of metal. It has a triangular form, is one span in circumference, and is ornamented with leaden balls. It has three peculiar movements of its own. According to the Agnipurāṇa it is 10 cubits long, round, and the noose is a hand in circumference. It is not regarded as a noble weapon.<sup>27</sup>

10. The *cakra* (discus) has the form of a circular disk with a quadrangular hole in its midst. Its color is like that of indigo water and its circumference amounts to two spans or 10 cubits according to the Śukranīti. Five or seven motions are connected with the discus practice. It is most probably identical with the quoit still in use in some Sikh regiments and also among the troops of Native Indian princes.<sup>28</sup>

11. The *dantakantaka* (tooth-thorn) is a thorn made of metal, is broad at the front, has a thin tail, and its color resembles charcoal. It is an arm high, has a good handle, is straight in

<sup>26</sup> See Ibidem, II. 17; IV. 42, 43.

42. Lagudassūkṣmapādassayāt prthvīntah sthūlaśrakah  
lohadhīagrabbhagacca hrasvadehassopīvarab.

43. Dantakayo dr̥dhaṅgacca tatha hastadvayonnataḥ  
utthānam pataṇam caiva peṣṭanām poθanam tatha.

Compare Agnipurāṇa, 151, 15.

<sup>27</sup> See Ibidem, II. 17; IV. 45, 46.

45. PataśuśrakamAvayavo lohadhātustrikogavān  
prādeśaparidhīssugulikābharaṇācītaḥ.

46. Prasaraṇam veṣṭanam ca kartanam ceti te trayāḥ  
yogē pāśāśrita loka pāśā kṣudrasaṁśritāḥ.

Compare Agnipurāṇa, 150, 2-8; 151, 6, 7.

<sup>28</sup> See Ibidem II. 17; IV. 47, 48.

47. Cakram tu kundalakāram ante svārāsamanvitam  
ntīlālīlavarpaṇa tat pradeśadvayamāṇḍalam.

48. Granthanam bhrāmanām caiva kṣepanām parikartanām  
dalānam ceti pañcaiva gatayāścakrasaṁśritāḥ.

Compare Śukranīti, Chapter V, sl. 156; Agnipurāṇa, 151, 8.

its body, and looks frightful. Two movements are required for using it.<sup>29</sup>

12. The *masundi* (octagonheaded club) has broad knots, a broad body, and a good handle for the fist. It is three arms long, and has the fearful color of a cobra. Its two principal movements are the jerking and the whirling.<sup>30</sup>

B. The class of the *anukta* weapons includes twenty different species.

1. The *vajra* (thunderbolt) was, according to tradition, made out of the backbone of the sage Dadhici. It keeps its mythical character throughout. Nothing can withstand its splendour, and it was originally made for the destruction of the demon Vṛtra. It shines brightly with the light of a crore of suns, and it resembles the fire which shone at the dissolution of the world. Its fangs extend to a yojana (10 miles) in length, and its tongue too is most horrible. It resembles the night of destruction at the end of the world, and is covered with 100 knots. Its breadth amounts to five yojanas and its length to 10 yojanas. Its periphery is covered with sharp points; in color it resembles lightning; a broad strong handle is fixed to it. Its movements are four in number.<sup>31</sup>

<sup>29</sup> See Ibidem, II. 17; IV. 49, 50.

49. Dantakanjakanāmā ta lohakanjaka dechayān  
agre pthuasūkṣmāpucchācaṅgāmānībhaktih.

50. Bahūnatasatītarata dāyākayo'gralocanah  
pūtanam granthumām celi dve gatt dantakṣṇāke.

<sup>30</sup> See Ibidem II. 18; IV. 51, 52.

51. Mūsundi ta bṛhailgranthirbphaddehassmasīsaruh  
bahistrayasamutisuhah kṛṣṇarpogravariyavān.

52. Yagnam gharpanam celi dve gati tat sumāśrite.  
Another form of the word is braṇḍi.

<sup>31</sup> See Ibidem, II. 19; V. 1-6.

1. Amuktprathamam vajram vakyāmi tava tacchrou  
aprameyśbalam vejrām kāmarāpadharum ca tat.

2. Dadhicipr̥thāthijanyam survatejāḥ prātāmakam  
vīrasaraniptārham daivatejopavṛnihilam.

2. The *ut* (hand-sword) is two cubits long, has no hilt for the protection of the hand, and is black colored. The front part of the blade is curved, and it is five fingers broad. Four movements are peculiar to it.<sup>32</sup>

3. The *parati* (axe) is a thin stick with a broad mouth. Its face is in front, curved like a half moon, the body is dirty colored, but the face is shining. At the foot end is the handle, and it has a head. Its height is the length of an arm. Its qualities are felling and splitting.<sup>33</sup>

4. The *gośīrṣa* (cow-horn spear) is two feet long; it is wooden in the lower parts and iron on the upper part. It has a blade, is of dark metal color, is three-cornered and has a good handle. Its height amounts to 16 thumbs; it is sharp in front and broad in the middle. Indra presented the *gośīrṣa* together with a seal to Manu, and the cow-horn spear and the signet-ring became henceforth the emblems of royalty. The *gośīrṣa* is handled with four movements.<sup>34</sup>

5. The *asūdheru* (stiletto) is one cubit long, has no hand-guard at the handle, is dark colored, has three edges, is two

3. Koṭistryapraticāśam pralayāmalasaṇibham  
yojanotsedudarāstrabhirjihvaya catigherayā.

4. Kalarātrinikāśam tat satyaprasāmāvṛtam  
pañcayojanavistaem unnataem daśayojanam.

5. Apimādhasaṇivitam parīṭāḥ tikṣṇakoṭimat  
tāṭidgauram ca pṛthvītāsruṇā ca virajitam.

6. Cālānam dhūnam cāvā chedanam bhedanam tatha  
valgitāni ca catvāri sada vajram śritāni vai.

*Compare Agnipurāṇa, 151, 16.*

<sup>32</sup> *Ibidem, II. 10; V. 7, 8.*

7. Ilī hastadvayotaedhā karstrarahitataṣṭub  
śyāmā bhugnagrājhalaka pañcaaguṇavistṛta.

8. Sampāṭam samudīḍnam ca nigrahapragrahau tatha  
tilm elāni catvāri valgitāni śritāni vai.

<sup>33</sup> *Ibidem, II. 10; V. 9, 10.*

9. Parāṇesūkṣmayaśīsayat viśalasyaḥ puromukhaḥ  
ardhaśandragre koṭistū malināṅgasphoranmukhaḥ.

10. Taṣṭupādassālikharo bahuṣatronnatākṛtiḥ  
pāṭanam chedanam ceti gupau parāsum arītau.

*Compare Agnipurāṇa, 151, 13.*

<sup>34</sup> *Ibidem, II. 10; V. 11-14.*

11. Gośīrṣam gośīrāḥ prakhyam prasāritapadadvayam  
ndhastā dāruyantrādyam urdhvayāḥphalakāśitam.

thumbs broad, and is applicable for fighting at near quarters. It is fastened with a waistbelt and is called the sister of the sword. It requires three movements. It is worn by kings.<sup>35</sup>

6. The *laxitra* (scythe) has a crooked shape, is broad at the back and sharp in front. It is black colored, five thumbs broad and one cubit and a half high. It is provided with a broad handle and is able to cut buffaloes into pieces. It is lifted with both arms and thrown.<sup>36</sup>

7. The *dsiara* (scatterer, bumarang) has a knot at the foot, a long head and is a hand broad. Its middle part is bent to the extent of a cubit, it is sharp, black colored and two cubits long. Whirling, pulling, and breaking are its three actions, and it is a good weapon for charioteers and foot soldiers.<sup>37</sup>

The general belief is that the bumarang is a weapon peculiar to the Australians; but this is by no means the case. It is well known in many parts of India, especially in its Southern Peninsula. The Tamulian Maravar and Kallar employ it when hunting and throw it after deer. In the

12. Nilalohitavaryam tat triratrica susatara  
sudasangulyunnatam ca tikpnagram prthumadhyakam.

13. Satkṛtya manava dattam mahendreya samudrikam  
prabhuṭvānacake loke rājām gośrāmudrike.

14. Muḍigrahaḥ parikṣepah paridhiḥ parikentanam  
cavāryetāni gośrīḥ valgitani pracakṣate.

<sup>38</sup> See Ibidem, II. 19; V. 15-17.

15. Asidheneusamakhyata hastaannatyapramāṇataḥ  
atalatratisaruyata syama koṣitrayasārita.

16. Aṅgulīdvayavistrot hyasamsaripughatini  
mekhalāgranthihint at tu projyate khadgaputriks.

17. Muṣyagrāgrahanam caiva pātanam kantanam tatha  
valgitatrayavat�tesa sada dhārya nṛpottamaib.

<sup>39</sup> See Ibidem, II. 19; V. 18, 19.

18. Lavitrā bhugnakāyam sāt pṛṣṭhe guru purāṇitam  
syānam pañcāngulivyānam sardhahastasānumatam.

19. Teṣuṛūga guruge nadīham mahiśādinikartanam  
bahudvayadyamaskṣepau lavitre valgite mate.

<sup>40</sup> See Ibidem, II. 19; V. 20, 21.

20. Āstaro granthipadasyat dirghamūlirbhṛtakarab  
bhugnahastodaraśītsh syāmavargo dvīhastakah.

21. Bhramayam karpuṣam caiva troṭanam tat trivalgitam  
jñātva satraṇa rāge hanyat dhāryasadi padatikaiḥ.

Madras Government Museum are shown three bumarangs, two ivory ones, which came from the armoury of the late Raja of Tanjore, and a common wooden one, which hails from Pudukoṭa. The wood of which the bumarang is made is very dark. I possess four black wooden and one iron bumarang, which I have received from Pudukoṭa. In the arsenal of the Pudukoṭa Raja is always kept a stock of these sticks. Their name in Tamil is *tai tadi* (தை தடி) bent stick, as the stick is bent and flat. When thrown a whirling motion is imparted to the weapon which causes it to return to the place from which it was thrown. The natives are well acquainted with this peculiar fact. The length of the *astara* or bumarang is not always exactly the same, the difference amounts often to more than one cubit.

8. The *kunta* (lance) has an iron body, a sharp top, and six edges. It is six or ten cubits high, and is round at the foot end. It is handled in six ways.<sup>21</sup>

9. The *sthāṇa* (anvil) has a red body and many knots standing near to each other; it is as high as a man, and straight. It is whirled and fells the enemy to the ground.<sup>22</sup>

10. The *prāśa* (spear) is seven cubits long and made of bamboo, which is colored red. It has a head made of metal, and is sharp at the foot end; it is adorned with silken tufts. Four movements are prescribed for it. In the Śukraniti it resembles a broad sword.<sup>23</sup>

<sup>21</sup> See Ibidem, II, 19; V, 22, 23.

22. Kuntastvayomayāṅgasuyat tīkṣṇastrāṅgabḥ sādārman  
pañcahaṭṭasamutsoḍho vṛttapādo bhayañkarabḥ.

23. Uddinam avadīnam ca nīdinam bhāmīlinakam  
tiryaglinam nikhatīam ca sādārṅgabḥ kūntam śrītāb.  
*Compare* Śukraniti, Chapter V, sl. 165.

<sup>24</sup> See Ibidem, II, 20; V, 24.

24. Sthūpasta raktañchāsuyat sāmipadr̄dhaparvakab  
pumpramāṇa r̄jusṭasmin bhramanam patañam dvayam.

<sup>25</sup> See Ibidem, II, 20; V, 25, 26.

25. Prāśanī saptahastāsuyat aunnatyena tu vaiparab  
lohastrāpaticikṣepadab kauseyartsbakañcītāb.

11. The *pināka* or *trisūla* (trident) has three heads, is sharp in front, made of brass, has an iron head, and measures four cubits. It has a tuft made of the hair of a bear, and its neck is ornamented with brass armlets. It is shaken and impales the enemy.<sup>41</sup>

12. The *gadā* (club) is made of sharp iron, has 100 spikes at its broad head, and is covered on the sides with spikes. It is a formidable weapon, four cubits long, and its body equals a carriage axle in measure. The head is adorned with a crest; it is covered with a golden belt, and is able to crush elephants and mountains. Twenty different motions are ascribed to the *gadā*.<sup>42</sup> By means of gunpowder it is thrown out of projectile weapons of various forms.<sup>43</sup>

13. The *mudgara* (hammer) is small at the foot end, has no face, and is three cubits long. Its color resembles

26. Ākarsaśca vikarṣaśca dhūmanam vedhanam tatha  
catara eti gatayo raktaprāsam samadrītāḥ.

*Compare Śukrantī, Chapter V, sl. 165.*

<sup>41</sup> *See Ibidem, II. 20; V. 27, 28.*

27. Piṇḍastu triśrṣṇayat dītagrah kṛūralocanāḥ  
kāshyakayo lohaśrṣṇācaturhastaprenendīvān.

28. Rākṣorāmatahakāo jhāllivalayagrīvavān  
dhūmanam mrotasām ceti triślām dve śrīte gatā.

*Compare Śukrantī, Chapter V, sl. 166, and Agnipurāṇa, 151, 9.*

<sup>42</sup> *See Ibidem, II. 20; V. 29-34.*

29. Gadaśākyasyasameṣī satārṣpethusūtrīṣaka  
sankuprāvaraṇa ghora caturhastāsmānmatā.

30. Rathākṣamātrakāya ca kīrtiśicitamastaka  
suvarṇamekhala Gupta gajaparvatābhodini.

31. Mandalāni vicitrāṇī gatapratyāgatāni ca  
astrayantrāṇī citrāṇī sīhanāni vivīdhāni ca.

32. Parimokṣam prahariṇam varjanam paridhavanam  
abhibhravaṇam akṣepam avasthānam savigraham.

33. Parivṛtiṇam sannivṛttam avaplutam upaplutam  
dakṣipam maḍalam caiva savyam mandalam eva ca.

34. Aviddhām ca pravidhām ca sphoṭanam jvalanam tatha  
upanyastam apanyastam gada mārgaśca vīraśatib.

*Compare Agnipurāṇa, 151, 12.*

<sup>43</sup> The word *Astrayantrāṇī* (*see v. 31-b*) is explained in the old commentary accompanying the *Nītiprakāśika* as "astravaṭagnyādinīmāupravuktaprasāpanī."

honey, its shoulder is broad, and it weighs eight loads.<sup>44</sup> It has a good handle, is round, black colored, and is a hand in circumference. It is whirled around and fells things to the ground.<sup>45</sup>

14. The *sira* (ploughshare) is doubly curved, has no head, but an iron-plated front, and crushes the objects with which it comes into contact. It equals a man in height, is of agreeable color, and by means of much dragging it causes persons and things to fall to the ground.<sup>46</sup>

15. The *musala* (pestle) has neither eyes nor head, neither hands nor feet. It is well joined together at both ends and fells and crushes enemies.<sup>47</sup>

16. The *pattiśa* (battle-axe) is of a man's height, has two sharp blades and a sharp top. Its handle has a protection for the hand. The *pattiśa* is generally called the uterine brother of the sword.<sup>48</sup>

17. The *mausṭika* (fist-sword, dagger) has a good hilt, is a span long and ornamented. Its end is sharp, it has a high neck, is broad in the midst and dark colored. It can make

<sup>44</sup> A load or *bāda* is generally estimated to be equal to 20 talas = 2,000 palas of gold, or between 140—150 pounds.

<sup>45</sup> See Ibidem, II. 20; V. 38, 38.

35. Mudgarasatkṣmapādasyat hinasīrasitihastavān  
madhuvarpaḥ prthusandhīsaçṭaharaguruśca saḥ.

36. Sataarurvartulo nile paridhyā karassammitaḥ  
bhṛtmanam pātanam ceti dvividham mudgureśitam.  
*Compare Agnipurāṇa*, 151, 14.

<sup>46</sup> See Ibidem, II. 20; V. 37.

37. Sto dvivakro viśikho lohapatījamukhaḥ kṛṣṇ  
pumpramāṇaḥ enigdharavarhaḥ svākṛṣṇaviniptavān.

<sup>47</sup> See Ibidem, II. 20; V. 38.

38. Musalastvakṣīrṣabhyam karaiḥ padairvivarjitaḥ  
mole cañteśisambandhaḥ pātanam prothanam dvayam.

<sup>48</sup> See Ibidem, II. 20; V. 39.

39. Pattiśaḥ pumpramāṇasyat dvividharastikṣṇasringakāḥ  
hastairṇasamāyuktamūṣīḥ khaḍgaśahodaraḥ.

*Compare Śukratī, Chapter V, 41, 153, and Agnipurāṇa, 151, 16.*

all sorts of movements, as it is a small and very handy weapon. Its qualities are enlarged upon by Vaiśampāyana.<sup>49</sup>

18. The *parigha* (battering ram) is of a round shape, as big as a palmyra-tree, and of good wood. Experts know, that a whole troop is required to make it move and strike.<sup>50</sup>

19. The *mayūkhi* (pole) is a staff, has a hilt, and is of the height of a man. It is covered with bells, exhibits various colors, and is provided with a shield as a friend. It is used for striking, for warding off a blow, for killing, for discharging and for attacking.<sup>51</sup>

20. The *sataghnī* (hundred-killer) is provided with thorns, is of black iron, and hard. It looks like a mudgara, is four cubits long, round and provided with a handle. According to Vaiśampāyana it resembles in all its movements the gada, it was therefore like the gada shot out of other projectile weapons. According to others it is itself a projectile weapon, a great cannon. The name states only its destructiveness, and leaves its nature doubtful; but if it was hurled out of

<sup>49</sup> See Ibidem, II. 20; V. 40-44.

50. Maṇḍikam abacurjñeyam pradeśonnatī bhṛṣitam  
śīṭagram umnatagrivam prthidaram sitam tatha.

51. Mayūkhanī visītrāpi sīhanāni vivīdhāni ca  
gomotrakāni citrāpi gatapratyagatāni ca.

52. Tiracīnagatānyeva tatha vakraugatāni ca  
parimokṣam praharānam varjanām paridhāvanām.

53. Abhidravāṇam aplāvam adhasṭhānam savigrahām  
parāvrttām apāvrttām apadrutām apaplūtām.

54. Upānyasām apānyasām aghatām sīhanām tathā  
etāni valgitānyāhurmaṇūṣīke nṛpasattāmā.

Compare Śukrānīti, Chapter V, 41. 153.

<sup>50</sup> See Ibidem, II. 20; V. 45.

55. Parīgho vartulākārasītāmātrasutāravāḥ  
balākāsadihyasampātāḥ tuśmin jñeyo vicakṣapālīḥ.

<sup>51</sup> See Ibidem, II. 20; V. 46, 47.

56. Mayūkhi krtayāsiṣyāt maṇiyuktā naronnātā  
kīṅgiśasāvṛta cītra phalikā sahaśāri.

57. Aghatām ēa pratīghatām vīghatām parīmocanām  
abhidravāṇam ityete mayūkham pañca saṁhāritāḥ.

enormous tubes by means of gunpowder, it must have been a very formidable projectile.<sup>32</sup>

These twenty weapons, belonging to the amukta division, are deposited in the second foot of the Dhanurveda.

All these thirty-two weapons were, according to tradition, taken from the body of the sage Dadhici. And this is the way how it happened :—

When the gods had been defeated by the demons in a great battle, which defeat they owed in some part to their insufficient knowledge of the Dhanurveda, they perceived on their flight the great sage Dadhici, who was sitting near the place they passed. To him they entrusted their arms and continued their flight until they reached the high mountain Mandara, under whose bulky body they sought and obtained an asylum. Here they rested for many years, acknowledging Indra as their immediate superior. The sage meanwhile guarded well these weapons, which through his penance had all been changed into spikes, had entered his body and had become his bones. Thus a long time passed away, until the gods became at last anxious to recover once more their lost position and to try another fight with the demons. In their dejection they appeared before Brahma, the father of all beings, and requested him to help them. Brahma, moved to pity, imparted to them the Dhanurveda, together with the spells and all the necessary implements belonging to it. Supplied with the Dhanurveda, his four feet and his six arms, the gods went in search of Dadhici and requested him to surrender to them their weapons. Dadhici was quite willing to do so, even though this kindness should cost him his life, provided he were allowed to ascend to the divine heaven.

<sup>32</sup> See Ibidem, II. 20; V. 48, 49.

48. Sataghni kṣaptakṣyuta kalayasamayi dr̥ḍha

mudgarābha caturhasta vartula tauruṇa yata.

49. Gada valgitavatyeṣṭ mayeti kathita tava.

His request was granted, and Dadhici advised the gods to let a cow lick his body until the bones which represented their arms were laid free. This was done. Out of the thirty-one bones of Dadhici's body arose thirty-one weapons, and his backbone, the thirty-second bone, was transformed into the thirty-second weapon, Indra's thunderbolt.<sup>53</sup> Provided with these weapons, which had assumed the shape of the bones from which they originated, the gods went to encounter the demons again, who could not withstand this time the assault of the gods.

But the mouth of the cow, as it had been guilty of the great sin of Brahman-murder, became henceforth an object of abhorrence to the pious; and up to this day orthodox Brahmans when meeting a cow, try to avoid looking at its head, and endeavour to let their eyes fall previously on the hinder part of its body.<sup>54</sup>

One of the most important weapons, the *khadga* or *asi*, i.e., the sword, is not included in these two lists, because being created separately and specially by Brahma, it was regarded as a superior weapon altogether.

The high estimation in which the *khadga* was held by Vaisampayana is not apparent in the Agnipurāna, where it is classed as a rather inferior weapon. Tradition says that it was given to Indra to be used against the Asuras. According to its nature the *khadga* belongs to the second or *amukta* class.<sup>55</sup>

<sup>53</sup> See Ibidem II, 43-60; Mahabharata, V, 8695; IX, 2949, &c.

<sup>54</sup> See Ibidem, II, 54, 65.

54. Gomukham brahmahat�api vivida nrpassitama  
devassantosanit lokaasvaiān ās rājivayana

55. Tadaprabhṛti loka vai na paśyantiha gomukham  
prātāḥ puruṣāśārdūla taddoṣagatamīnasāḥ.

<sup>55</sup> See Agnipurāna, 148, v. 5 and 8.

5. Khadgādikam amuktam ca niyuddham vigatayodham.

8. Tati khadgajaghanyani bahupratyavarāpi ca.

The story goes, that when the gods were battling against the demons, there appeared through Brahma's agency on the top of the Himalaya mountain the deity of the sword, the *Asideratā*, illuminating by its splendour the whole sky, the earth at the same time was shaking to its very foundation. The *khadga* was thus introduced into the world by Brahma for the sake of freeing the universe from the mighty demons. It was 50 thumbs long and 4 broad, and Brahma entrusted it to Śiva or Rudra. After success had attended the undertaking of Śiva, he delivered the sword to Viṣṇu, who on his side handed it over again to Marci and the other sages. One of the latter, the sage Rāshba, gave it to Indra. Indra conferred it on the guardians of the quarters of the world, and these latter presented it to Manu, the son of the Sun, to help him in the administration of justice against evil-doers. Since that time it has remained in the family of Manu. The constellation of the *khadga* is the Kṛttika, its deity Agni, the head of its gotra Rohini, and its supreme deity is Rudra. Besides Nistrīṣṭa it has the eight following different names: *Asi*, *Viṣamana*, *Khadga*, *Tikṣṇadharma*, *Durdasa*, *Śrigarbhā*, *Vijaya* and *Dharmanūla*. It is handled in thirty-two different ways, and carried on the left side.

The third species of weapons, the *Muktāmukta*, those which may be thrown and not thrown are divided into two classes, into the Sopasanhāra or those which are connected with the withdrawing or restraining Upasanhāra and into the Upasanhāra themselves, which are the restrainers of the previous class.<sup>54</sup>

Of the former there are 44 varieties, and of the latter 54.

Ibidem, 149, 7, 8; 150, 1-6; Compare Śukranīti, Chapter V, 43. 154, 155; and Nitiprakāśika III, 1-40. The third book of the Nitiprakāśika is entirely devoted to the *khadga*. Compare ibidem also, II. 12a.

12a. Mukham baṇḍi vijayam khadgādikam amuktakam.

<sup>54</sup> The Sopasanhāra and Upasanhāra weapons are almost identical with the lists of arms presented by Viṣvāmitra to Rāma as we read in the Bala-kānda (in Schlegel's edition, cantos 29 and 30; in the old Calcutta edition,

The 44 Sopasamhara weapons are the following :—

1. The *dasyacakra* (discus of punishment).
2. The *dharmaśakra* (the discus of right).
3. The *kīlacakra* (the discus of Yama).
4. The *sindraśakra* (the discus of Indra).
5. The *sūlaśvara* (the spear of Śiva).
6. The *brahmaśirṣa* (the head of Brahma).

canto 26). The latter edition contains more names than Schlegel's. The enumeration contained in Vaisampyana's Nitiprakāśika is independent of that of the Rāmāyaṇa, and for that very reason it is peculiarly interesting. It is therefore here given in the original : Nitiprakāśika, II, 22-37.

22. *Dasyacakram dharmacakram kalaśakram tathaiya ca sindracakram tilavaram brahmaśrāgma ca modakti.*
23. *Śikhart dharmapadam ca tatha varusapāśaknum pañkakṣetram ca vayavyam dūskardro, śikharaśratam.*
24. *Krauñcaśastram hayaśrāgma ca dīvyadīvya'sirasasūñjīlike gandharvaśastram nandaśastram varṣapām śopapam tathā.*
25. *Prasāpanaprāṇamane sāntapānavilāpane mathanam mānavasīram ca sīmanam tāmasam tathā.*
26. *Sahvartam mausalam satyam sauram mayaśtram eva ca tvitśram aśtram ca somāśtram sañjhārnam mānasam tathā.*
27. *Nagśram gurudāśtram ca salileśikōstrasañjīlike catuśatvāri caitāni sopasamharaṇaśi vai.*
28. *Vakṣyāmī copasamhārīn kramaprāptān nibodhame yān jñātāv vairimuktāni cāstrāṇi śāmayisīṣi (*Priku*).*
29. *Satiyavān satyakirtīta rābhoso dhr̄ṣṭe eva ca pratiḥaratarāścīvāpyavāñmukhapañcāñmukhau.*
30. *Dṛḍhanabho lākyālakṣyavāñvīśaka sunthbhaṅkaḥ dātakṣatavaktrāśca dātāśrīpātadarsa.*
31. *Dharmabho mahānabho dāndunabhaṣṭu nābhāṅkaḥ jyotiśavimālau caiva nairāśyakāśāntvubhau.*
32. *Yogandharabha sanidraśaka daityaḥ pramathanaśtathā sācīrmālī dhr̄tīrmālī vṛttimān rociṇastathā.*
33. *Pitryassauṇanāśaścaiva viddhūtāmakarau tathā karavīro dhanarāśi dhanīyam vai kāmarōpakaḥ.*
34. *Jīmbakavarapām caiva mohab kāmaruciśtathā varūpāḥ sarvadāmanāḥ sandhanāḥ sarpanāthakaḥ.*
35. *Kuñkalaśastram mausalaśastrum kāpalaśastram ca kuñkāṇam pañcāśastram eti pañcāśauriśtrāṇi bhūpate.*
36. *Satiyavān sarvadāmanāḥ kāmarūpāstathāśivā ca yogandharopālakṣyāścīvāśurāśtravighataṅkaḥ.*
37. *Catuśatvāśrīmat ete pañcānyonyavimardanāḥ mālāyīta ca pañcāśāt akonāhyāśtrāśmakaḥ.*
38. *Sarvamocanānāmā tu suprabhātanayo mahān muktāmuktākīlatamo madvarāśi prathītaḥ parāḥ.*

7. The *modaki* (the charmer).
8. The *sikhi* (the pointed).
9. The *dharmaśā* (the noose of right).
10. The *varṇapāda* (the noose of Varuna).
11. The *pāñḍakāstra* (the missile of Śiva).
12. The *śayanya* (the missile of Vāyu).
13. The *sukta* (the dry).
14. The *ardra* (the wet).
15. The *śikhāstra* (the flaming missile).
16. The *krauñcaśātra* (the Krauñca missile).
17. The *hayaśīrṣa* (the horse-headed missile).
18. The *vidyāstra* (the missile of knowledge).
19. The *avidyāstra* (the missile of ignorance).
20. The *gandharvāstra* (the gandharva missile).
21. The *nandanāstra* (the joy-producing missile).
22. The *rājapā* (the rainy missile).
23. The *śoma* (the drying missile).
24. The *pravṝpana* (the sleep-causing missile).
25. The *pratamanā* (the soothing missile).
26. The *satiāpana* (the tormenting missile).
27. The *vilāpana* (the wailing missile).
28. The *māthana* (the churning missile).
29. The *mānasāstra* (the missile of Manu).
30. The *sāmarā* (the conciliatory missile).
31. The *tāmasa* (the missile of darkness).
32. The *sāhvarts* (the rolling missile).
33. The *mausala* (the club-shaped missile).
34. The *satyā* (the missile of truth).
35. The *sava* (the missile of the sun).
36. The *māyāstra* (the missile of illusion).
37. The *tedāstra* (the missile of Viśvakarma).
38. The *somāstra* (the missile of the moon).
39. The *samādra* (the missile of restraining).
40. The *mānasā* (the spiritual missile).
41. The *nāgāstra* (the missile of the serpent).
42. The *garudāstra* (the missile of Garuḍa).

43. The *sañcitta* (the rocky missile).
44. The *ijñāstra* (the reed missile).

The 55 Upasamhāra weapons are as follows :—

1. The *satyasā* (the true).
2. The *asyakirī* (the truly-famed).
3. The *rathasa* (the impetuous).
4. The *dhyūta* (the bold).
5. The *pratihāra* (the warding off).
6. The *adāmukha* (the downfaced).
7. The *parāmukha* (the averted face).
8. The *dyūdhābha* (the weapon with firm navel).
9. The *alaksya* (the imperceptible).
10. The *lakṣya* (the perceptible).
11. The *āśila* (the turbid).
12. The *snandhaka* (the weapon with good navel).
13. The *datikpa* (the ten-eyed).
14. The *sataṅktra* (the hundred-mouthed).
15. The *daṭṭaṅkpa* (the ten-headed).
16. The *satodara* (the hundred-bellied).
17. The *dharmandhā* (the weapon with the navel of right).
18. The *māṇḍhā* (the big-navelled).
19. The *duṇḍuṇḍhā* (the drum-navelled).
20. The *nābhaka* (the navelled).
21. The *jyotiṣa* (the luminous).
22. The *vimala* (the stainless).
23. The *naśrāsyā* (the discourager).
24. The *kortasyā* (the emaciating).
25. The *yogandhāra* (the united).
26. The *sañcita* (the sleeping).
27. The *daitya* (the fiendish).
28. The *pramāṇa* (the churner).
29. The *śārcīmāla* (the garland of energy).
30. The *dhyūti* (the supporting).
31. The *māli* (the necklaced).
32. The *vyttima* (the abiding).

33. The *ruciira* (the glittering).
34. The *pilyra* (the paternal).
35. The *sammans* (the good-minded).
36. The *vidhuta* (the vibrating).
37. The *makara* (the monster).
38. The *karattra* (the scymitar).
39. The *dhanarati* (the desire of wealth).
40. The *dhanya* (the grain).
41. The *kamardaka* (the shape-assumer).
42. The *jambaka* (the gaper).
43. The *avaraya* (the protecting).
44. The *mohs* (the fascinating).
45. The *kāmaruci* (following one's own wishes).
46. The *vāruna* (the missile of Varuna).
47. The *sarvadama* (the all-subduer).
48. The *sandhāna* (the aimer).
49. The *sarpandhaka* (the missile belonging to the god of serpents).
50. The *kaikidīstra* (the skeleton missile).
51. The *meusaldīstra* (the pestle missile).
52. The *kdpdīstra* (the skull missile).
53. The *kaikkaya* (the bracelet weapon).
54. The *paistedīstra* (the infernal missile).

The Sopasanthāra weapons are contained in the 29th Sarga of Schlegel's edition of the Balakanda, while the Upasamhāra weapons are mentioned mostly in the 30th canto.

The last five weapons are peculiar to the demons, while five other weapons are on the other hand most effective against these demons and cause their destruction; they are found under the numbers 1, 9, 25, 41, and 47.

These 44 Sopasanthāra and 54 Upasamhāra weapons represent the Muktamukta class, and they are deposited in the third foot of the Dhanurveda. They represent the belief so widely spread in India that the knowledge of certain spells endowed their owner with supernatural power, of which power these mysterious weapons are the outward token. To a person not within the pale of Brahmanism they appear like

mere creations of a fervid imagination. On the other hand the Indians do not stand alone in this belief in supernatural weapons, though it has been reserved to them only to define and to classify them methodically.

The last and most potent division, or the Mantramukta, is only represented by six weapons, but then they are so powerful that nothing can frustrate or subdue them. Their names are—

1. *Vishvavakra* (the discus of Viṣṇu).
2. *Vajradstra* (the thunderbolt).
3. *Brahmadstra* (the missile of Brahma).
4. *Kālapānka* (the noose of death).
5. *Nṛāyanāstra* (the missile of Nṛāyapa).
6. *Pāśupatāstra* (the missile of Paśupati).

These six weapons, which are projected by spells, reside in his fourth foot.<sup>57</sup>

When Vaiśampāyana has finished in his second chapter the enumeration of the weapons, which he assigns to the four different classes, and has given in the following three chapters an accurate description of the sword and all the thirty-two arms belonging to the two first divisions, he remarks that the efficiency of the weapons varies and is subject to great changes. In different ages and at different places the quality of a weapon is not the same, for the mode of construction and the material out of which it is made is of a different kind. Moreover much depends on the strength and the ability of the person who uses such arms in increasing, preserving or diminishing their efficiency.<sup>58</sup>

In addition to these weapons others were in actual use, but they are said to be specially peculiar to the lowest or

<sup>57</sup> See *Nitiprakssika*, II. 40.

<sup>58</sup> 40. Viṣṇuvakra vajram astram brahmaastram kālapātakum  
nṛāyanān pāśupatam nāśayam itartastrakaiḥ.

<sup>59</sup> See *Nitiprakssika*, V. 61.

<sup>60</sup> Etani vikṛtim yānti yugaparyayato nṛpa  
dehādaribhyanusareṇa tathā buddibhyanusarśāḥ.

fourth age, the Kaliyuga, in which we live. Though these four ages or *yugas* are nowhere mentioned in the ancient Vedic literature, and though the constitution of the great or *Mahāyuga* is most probably an invention of a comparatively later period—perhaps after the commencement of the Kaliyuga had been connected with a certain date and the other yugas had been reckoned backwards from that date—it is a most singular phenomenon that many otherwise enlightened Brahmins really believe that they possess records from these previous three yugas.

The assumption of the depravity of the existing Kaliyuga and the superiority of the preceding ages is consoling to the feeling of those who no longer occupy the same exalted position as formerly, and who try to insinuate that the cause of the loss of their prestige is neither due to their own faults nor to the superiority of their rulers, but to the decrees of fate, to which every one is subject. We can here dispense with the presumption that the arms of any particular yuga are good or bad in the same proportion as the yuga itself is good or bad, the more so as a good and really auspicious age, from its intrinsic goodness, does not require any weapons to protect it; as in such a happy era righteousness and prosperity prevail everywhere.

But even in the Kaliyuga humanity is not so debased that no voice is raised against the use of cruel and barbarous weapons. On the other hand wherever and whenever arms are used, the object of their use must have been to apply force, either for offensive or defensive purposes. Remembering this fact one need not wonder that but little humanity is as a rule displayed in restraining the efficiency of weapons, and though, as we shall see, the ancient Hindu law books objected strongly to the use of certain arms, it is doubtful whether this prohibition was in reality ever enforced, for there exists a difference between uttering sentiments creditable to humanity and enforcing them in practice.

On the other hand we meet occasionally precepts which certainly do not exhibit a great amount of human kindness. Thus we read in the Pañcatantra : " By a wise man should an enemy be killed, even if he be his son-in-law ; if no other means be possible, he who murders commits no sin. A soldier who goes to the battle does not think about right and wrong ; Dhṛṣṭadyumna was in olden times murdered in his sleep by the son of Drona."<sup>59</sup>

The war machines which the ancient Indians used, whether they were made of metal or of stone, and out of which they hurled iron and lead balls at their enemies, were doubtless discharged by means of gunpowder. The existence of gunpowder is intimated by Vaiśampāyana in his description of the nalikā and by the application of smoke-balls which, according to the commentator of Vaiśampāyana, were really made of gunpowder.<sup>60</sup> The ancient Hindus were also, as is well known, great adepts in the art of smelting and casting metals.

The old Hindus displayed a great ingenuity in inventing injurious and irritating compounds and refined expedients for hurling them amongst the enemy during a combat.<sup>61</sup>

Boiling oil has been used by many nations in different parts of the globe, and the old Indians believed also in its efficacy, but they used besides explosive oil. The resin of the Sal tree (*Shorea robusta*), which resin is also called *kalakala*, is recommended likewise. The casting of melted sugar is mentioned as well as that of heated sand. Pots filled with venomous snakes mixed together with honey, spikes and big stones, saws, smoke-balls, burning husks of corn, and other injurious preparations were frequently employed in India.

<sup>59</sup> See Pañcatantra, I. 299, 300.

<sup>60</sup> Dhūmagulika is explained by Cāraṇagola, powderball.

<sup>61</sup> See Nītiprakasika, V. 52.

52. Yantrapī lohastanam gulikāśepakā ca  
tatha copalayantrapī kṛtimāyaparī ca.

The soldiers of Duryodhana, when encamped in Kurukṣetra, had at their disposal similar implements of war.<sup>62</sup>

These weapons and mixtures were probably used more generally during sieges and in street-fights than in open combat.

The weapons just now enumerated and many others of the same objectionable and cruel type are ascribed to the depravity of the Kaliyuga, when war is conducted in an unfair, mean, and deceitful manner. The existence of many uncivilized nations of the lowest origin contributes greatly to the degeneration of the times. Among the despicable peoples thus enumerated are found the Huns, Pulindas, Śabarās, Pahlavās, Śakas, Malavās, Varvarās, Koṅkānas, Āndhras, Colas, Pāṇḍyas, Keralas, Mlechhas, Candālas, Śvapacās, Khalas, Mavellakas, Lalitthas,<sup>63</sup> Kirātas, and Kukkuras. To add insult to injury, and to show the low position of these nations, the Hindus said these tribes originated from the vagina of a cow.<sup>64</sup>

<sup>62</sup> See *Ibidem*, V. 53, 54.

53. Koṭayuddhaśāhayāni bhavisyanti kalau nṛpa  
taptaisailam surjarasam guḍalalo gravileka.

54. Madhusatviṇghatāḥ śikṣāni bṛhaečchilāḥ  
krakeca dhūmagulikāḥ tuṣāṅgarādikam tatha.

Compare, Mahābhārata, Udyogaparva, Adhyaya, 155, 5-7.

55. Sakucagrahavikṣepāḥ sañcīlagudavālukāḥ  
sātviṇghatāḥ sarve sasurjarasapādusavāḥ.

56. Saṅghataphalakāḥ sarve strogudajalopalāḥ  
sañsalabhindipalaśca samadōchiṣṭamudgarāḥ.

57. Sakandadandakāḥ sarve sastriyatomarāḥ.  
sañsrupitākāḥ sarve sadatrākuśatomaṁrāḥ.

<sup>63</sup> See *Ibidem*, V. 55-57.

58. Hūnāḥ pulindāḥ śabārā varvara pahlavāḥ tākāḥ  
malavāḥ koṅkānaḥ hyāndhrāḥ colāḥ pāṇḍyaḥ sakeralaḥ.

59. Mlecha goyonayaśoanye candālaḥ śvapacāḥ khalāḥ  
mavellakaḥ lalitthasaḥ kirātaḥ kukkanraḥ tatha.

60. Paṇḍa hyete katham dharmam vetyantī ca viyomayāḥ  
saṅkaryadoṣanirataḥ bhavisyantyadhamē yuge.

<sup>64</sup> Most of these names appear also in the Mahābhārata and Rāmayana. The Hindus call the modern Europeans, *Hūnā*, this expression most probably arose from the idea that the ancient Hunnish invaders came also from Europe. The 14th Chapter of the Harivamśa contains an enumeration of many barbarous nations.

## CHAPTER II.

## ON THE AUTHENTICITY OF THE ŠUKRANITI.

The reputed author of the Šukraniti—a chapter from which on the army organisation and the political maxims of the ancient Hindus we shall give further on in these pages—is Uśanas or Šukra. He is also called Maghabhava, Kavi, Kāvya, Bhārgava, Śoḍasārcis, Daityaguru, and Dhīṣṇya.<sup>62</sup> According to some he is the son or descendant of Bhṛgu, and, therefore, he is named Bhārgava; to others he is known as Kavi or the poet, and to others also as Kāvya, the son of Kavi, a son of Bhṛgu. He is regarded as the regent of the planet Venus or Šukra; and the Šukravān or Friday is named after him; his connection with this planet is also evident in his names Maghabhava, Śoḍasārcis, and Dhīṣṇya. Moreover he is the preceptor of the Daityas or Demons and is called therefore Daityaguru. Br̥haspati, the preceptor of the gods and the regent of the planet Jupiter, is like Šukra the author of a famous Dandanīti, or a work on civil and military administration. This work of Šukra is highly praised in the Kamandakiya, as containing the principles of all sciences, and its slokas are very often found in the Kamandakiya.<sup>63</sup>

Throughout Indian literature Šukra is always upheld as one of the greatest sages, his sayings are carefully noted and quotations from his Essence of Polity or Nitisāra are met with in the most ancient and celebrated writings.

<sup>62</sup> See "Šukro Maghabhavaḥ Kāvya Uśana Bhārgavah Kavīḥ Śoḍasārcis Daityagurur Dhīṣṇyab," in Hemacandra's *Anchārtharetnamālā*, II, 33 and 34; compare Amarakoṣa, I, 1, 26; and Halayudha's *Abhidhanaratnamāla*, I, 48; &c. &c.

<sup>63</sup> See Kamandakiya, II, 4, 5.

4. Vartā ca dandanītīca dve vīḍye ityavasthitō  
lokasyārtha-pradhanatvāt śreyāḥ surspurodhāmb.

5. Eknivā dandanītītu vīḍye tyaśānast etithīḥ  
taśyām tu sarvavidyāntam arambhāḥ samadahyataḥ.

The reason of calling Šukra's work a *Dvayānīti* is explained in Šukraniti, I, 157, as follows:—

Damo danda iti khyatatastāmat dandō mahipatiḥ  
taśyā ntiśāpādāntiśāyanāt nitiracytic.

The author of the Śukranīti is very frequently mentioned in the Mahābhārata. In one place we read that Brahma wrote the first Dandanīti which contained the enormous number of 100,000 chapters. This bulky volume was reduced by Śāṅkara or Śiva into a code called Viśalakṣa which still comprehended 10,000 chapters. Indra reduced the Viśalakṣa into the Bahudandaka which reached the respectable number of 5,000 chapters. Indra was followed by Brhaspati, whose Brhaspatya amounted to 3,000 chapters. Kāvya or Uśanas thinking that the life of man was too short to digest such enormous books limited his Nitisāra to 1,000 chapters.<sup>27</sup> It was thus Uśanas, who made the Dandanīti accessible to men.

<sup>27</sup> See Mahābhārata, Śāntiparva, Rājadharma, LIX, 28, 29, 72-87.

28. Tān uvaca surān survān Svayambhūr bhagavānstataḥ  
śreyo'ham cintayisyami vyetuvohitih surasabbhāḥ.
29. Tatodhyayasaḥsaṛtpam tataṁ cakre svabuddhijam  
yatra dharmasthaivārthaḥ kāmaścaivabhīvarṇitaḥ.
76. Etat kṛtvā subham sastram tataḥ subhagavān prabhuh  
devin uvaca saṁhrītaḥ tataḥ Śakrapurogāmān.
77. Upakaraya lokasya trivargasthaṇapāya ca  
navanītam saravat� buddhiroga prabhāvita.
78. Danḍena sahitāyess Lokarakṣapakarika  
nigrahanugraharatā lokan asucarisyati.
79. Danḍena niyate cedam danḍam nayati vā punah  
danḍanītirīti khyata trilokān abhivartate.
80. Saḍguṇyaguṇasāraṇī sthāsayatyagre mahātmāsu  
dharmārthakāmamokṣācāraḥ hyत्रā sañcītaḥ.
81. Tatastān bhagavān nītī pārvam jagraha Śāṅkarāḥ  
bahurūpo viśalākṣaḥ śivasthaṣurumāpatiḥ.
82. Prajanām Ayuṣpohrānam vijñāya bhagavān Śivāḥ  
sañcīkṣeṣa tataḥ sāstram mahārtham brahmaṇā kytam.
83. Viśalakṣaṁ iti proktam tad idam pratyapadyata  
daśadhyayasaḥsaṛṭi Sabrahmanyo mahatapāḥ.
84. Bhagavān api tačchastram sañcīkṣeṣa Purandarāḥ  
saḥsaṛṭiḥ pañcābhīs itāt yaduktam bahudandakam.
85. Adhyayānam sahaśraśatu tribhireva Brhaspatiḥ  
sañcīkṣeṣevara buddhya Brhaspatyam yaducyata.
86. Adhyayānam sahaśreṇa Kāvyaḥ sañcīkṣeṣa abravī  
tačchastram amṛtoprajño yogacaryo mahayājāḥ.
87. Evam lokanurodhena sāstram etiṁ mahārshibhīḥ  
saṅkṣiptam āyurviñāya martyānam hrīsam eva ca.

According to the *Nitiprakāśikā* Brahma, Rudra, Subrahmanyā, Indra, Manu, Brhaspati, Śukra, Bhāradvāja, Gauraśiras and Vyāsa were authors of works on polity. Brahma's *Dandanīti* contained 100,000 chapters, that of Rudra 50,000, that of Subrahmanyā 25,000, that of Indra 12,000, that of Manu 6,000, that of Brhaspati 3,000, that of Śukra 1,000, that of Bharadvāja 700, that of Gauraśiras 500, and that of Vedavyāsa 300 chapters.<sup>22</sup>

In the second Śloka of the Śukranīti we read that Brahma's work consisted of ten millions of double verses, which would give to each chapter an average length of 100 Ślokas.<sup>23</sup>

Just as the Mānavadharmaśāstra does not contain as many verses, as are said to have been originally in it, so also is the Śukranīti we actually possess by no means as long as is indicated in the Mahābhārata. In fact at the end of the 4th section the Śukranīti is declared to be only 2,200 Ślokas.

<sup>22</sup> See *Nitiprakāśikā*, I, 21-28.

21. Brahma mahaśvaraḥ skundasēndraprācetaso manuḥ  
brhaspatiśca sukrīśca bhāradvajō mahatapāḥ;
22. Vedavyāsasca bhagavān tātā gauraśira munīḥ  
ete hi rājāśrāpām prācetāḥ parantayāḥ.
23. Lakṣadhyayān jagau brahma rājassatre mahamatib  
pañcasat ca sahaśrāṇi rudraḥ saṅkṣipya cārvāvit.
24. Pañcavimśat sahaśrāṇi skandīsāṅkṣipya cāvadat  
daśādhyayasaṅhaśrāṇi dvisaṅhaśre ca vīśvavāḥ.
25. Prācetasamannūcapi sāṅhaśrāṇyathabhravit  
trigadyadhyayasaṅhaśrāṇi brhaspatiruvrūca ha.
26. Kāvyaṁ tāt samālodye cakre'dhyayasaṅhaśrāṇam  
saptadhyayasaṅtām āśram Bharadvājastathābhāṣat.
27. Munirāsūrāścapi pañcadhyayasaṅtām jagau  
vedavyāsāstū bhagavān tāt sāṅkṣipya mahamatib
28. Śatāśrādhyayavatīm nītīm cakre mahānūte  
sāṅkṣipītām ayurviśaya martyanām buddhidopataḥ.

<sup>23</sup> See Śukranīti, I, 2-4.

2. Pūrvadevalyathānyāyam nītīśram uvaca tan  
tatalakṣadīlokaṁtām nītīśram atīktaवान्.
3. Svayambhūr bhagavan lokahitartham saṅgrahēga vai  
tātīśram tu Vasiṣṭhadīyairsemaṁbhīrvyddhihetave.
4. Alpayubhūrīadyartham sāṅkṣipītām tarkavistriam.

long, and it speaks well for the preservation of this ancient work, that though the MSS. differ as to their length in some way or other, the variations in them are not very great. One MS. contains indeed exactly 2,200 slokas, and all MSS. I possess contain the above verse in question, which thus defines the proportions of the Śukranīti.<sup>70</sup>

In the beginning of the 58th Chapter of the Rājadharmā the name of Kāvya occurs also as one of the authors of a Dharmasāstra, and he is likewise mentioned as such in the second Śloka of the Pañcatantra.<sup>71</sup> The Kamandakiya and other similar works allude repeatedly to our author. It is a peculiar coincidence that the reason for composing the Śukranīti is the same both in the Śukranīti and in the Mahābhārata. If the former were a later production the cause of this agreement would be evident, but there are many good grounds for the supposition that this is not the case, and that the quotations from Śukra's work on Polity found in such ancient works as the Mahābhārata, Harivarṣa, Kamandakiya, Pañcatantra are genuine quotations. A few examples taken at random will be sufficient for our purpose.

The Mahābhārata quotes in the 56th Chapter of the Rājadharmānuśāsana the following as the saying of Uśanas : "A law abiding king should in the exercise of his duties chastise a Brahman, who has even read the whole Veda, who

<sup>70</sup> See Śukranīti, IV, VII, 345.

Manvaldyairadṛto yorthastadarthe Bhargavepsa vai  
dvāvinikatitātām ślokā nūtisare prakrtitāḥ.

<sup>71</sup> See Rājadharmā, LVIII, 1-4.

1. Ete te rāja dharmapām navamitam Yudhiṣṭhīra  
Brhaspatirhi bhagavān nānyam dharmam prētarasati.
2. Vitalakpaśa bhagavān Kāvyaśca mahātāpāḥ  
sahamakṣo Mahendrasāca tathā Pracetaso Manuḥ.
3. Bharadvajātās bhagavān tatha Gaurasīrā munibh  
rājāsastraprapetārā brahmaṇya brahmavādināḥ.
4. Rakṣām eva prādhānsanti dharmam dharmasyātām varā.

See also Pañcatantram, I, 2.

Manave Vacaspataye Sukraya Parīkṣaya nāmātaya  
Caṇakytaya ca viduṣe nāmo'stu nayatastrakartubhyāḥ.

approaches with uplifted weapons and intent to murder. The king knowing the law should certainly protect the law which is being broken. By such an act he is no law-breaker; for fury recoils on fury." Our Śukranīti expresses this decision (IV, VII, 259) as follows: "He who has raised a weapon against an approaching assassin, even if this be a Vaidika Brahman (Bhrūṇa), and has killed him, should not be considered as a murderer of a Vaidika Brahman; if he has not killed him, he should be regarded as such."<sup>22</sup>

As the sloka of the Śukranīti contains a more difficult reading and the rare term Bhrūṇa in the sense of Vaidiki-brahman occurs here, which is, as it were, explained in the Mahābhārata by "Vedantapāraṇa," there seems to be no doubt which of the two versions is the earlier.<sup>23</sup>

The 57th chapter of the Rajadharma begins with another quotation of Uśanas. He is said to have declared that "the earth swallows these two, namely, a king who does not oppose an enemy and a Brahman who does not travel about, like a snake swallows the animals living in holes."

<sup>22</sup> See Mahābhārata, Rajadharma, LVI, 27-29.

27. Ślokau caśanasi gitau purātata maharṣīṇa  
tau nibodha maharṣīa tvam ekagrāmāna nṛpa.

28. Udyamya dāstram ayāntam apि vedantapāraṇam  
nigrhṇīyat svadharmēṇa dharmapekṣe naradhipab.

29. Vināsyamānam dharmām hi yo'bhirakṣet sa dharmavit  
na tena dharmāha sa syat manystanmanyum rochati.

Compare this with Śukranīti, IV, VII, v. 259.

Udyamya dāstram ayāntam bhrūṇam apyātata�inam  
nīkhyāta bhrūṇa na syat ahaivā bhrūṇa bhavet.

Compare further with these slokas, Mōsu, VIII, 350, 351.

<sup>23</sup> That Bhrūṇa means a Vaidika-Brahman murderer is clear from Kullakshabhaṭṭa's Commentary to Manu, VIII, 317 (annade bhrūṇāha māṣṭi patyau bharyāpacariṇi), for he says there: "Brahmaha yaḥ tataśbandhiyo'mnam ati tasmin asau svapēpam saṅkrāmatyati. Bhrūṇāhannabhuktub papam bhavatī. Etad atra vivakṣitam na tu brahmagnih papam nasyati tatha bhāryā vyabhicariṇi jarapatim kāmamānape bharteri papam nānaloṣayati."

Compare also Nādṛīhāraṇasāmī by Iragapadandadhīnatha, II, 125, under the word bhrūṇa "Bhrūṇorbhāṣe strāpiṇgarbhe garbhīṣyam śrotriye dvije."

The Śukranīti contains (IV, VII, 242) this very sloka.<sup>74</sup>

The Harivarṇa ascribes to Uśanas the wise prescription, that one should never confide in a person whose trustworthiness one has not proved previously, and even to be cautious in giving confidence to a trustworthy person, as the evils of misplaced confidence are serious. This very sentiment, though not quite in the same words, may be found in Śukranīti III, 47-49.<sup>75</sup>

It is peculiar that the Pañcatantra refers these verses on the acquisition of friends to a passage in the Śukranīti, and here,

<sup>74</sup> See Rajadharma LVII, 1, 2.

1. Bhagavān Uśana hyah slokam atra viśampate  
tad ihaikamān rājan gadatasānibodhamo.  
2. Dvāvīman grāssate bhanubh arpo vilāsayan iva  
rājanām cāvīyoddharam brāhmaṇam cāpravāsinam;  
in its stead we read in the Śukranīti, IV, VII, 242:  
Rājanām cāpoyoddharam brāhmaṇam cāpravāsinam  
nirgilati bhāmiretaḥ arpo vilāsayan iva.

<sup>75</sup> See Harivarṇa XVIII, 127-131.

127. Kusanhṛdena viśvāsaḥ kudstena prajivya te  
kurtjani bhayam nityam kūpate sarvato bhayam.  
128. Apakripi vīrasambham yaḥ karoti narādhamāḥ  
anātho durbalo yadvannacīram sa tu jīvati.  
129. Na viśvāset viśvāste viśvāste nātīviśvāset  
viśvāset bhayam utpannām mūlanyapi nikrintati.  
130. Rājasocvā viśvāsaam garbhāsaṅkramiteṣu ca  
yaḥ karoti naro mūḍho na ciram sa tu jīvati.  
131. Abhyunnatim prapya nṛpaḥ pravarām kīṭako yatha  
na vinātyatyaśandeham śailavām Uśana nṛpa.

See also Pañcatantra II, 46, and Kāmandakiya, V, 88, 89.

The Śukranīti expresses in the following slokas, III, 76-80, the same ideas:—

75. Bhṛtyo bhṛtītāpi vā putrāḥ patni kuruyāt na caiva yat  
vidhāsayanti os mitrāpi tat kāryam avīśāṅkitam.  
76. Ato yateśāt pṛetyāpi mitralabdhīrvāra nṛpām  
nātyantam viśvāset kaścīt viśvāstam api sarvā.  
77. Putram vā bhṛtīram bhāryām anātyam adhikāriṇam  
dhāmastrī rājyalobhe hi sarvāśām adhikō yataḥ.  
78. Prāmāṇikam cānubhūtīam āptām sarvātma viśvāset  
viśvāsatvātmasvedgūḍhāśāt kāryam vimarśet svayam.  
79. Tadvakyam tarkato'narthaṁ vipariṇam na cintayet  
catussāgītāmādīkām tānnaśātīm kṣamāyat alīha.  
80. Svadharmaṇītībalavān tena malītrīm pradhārayet  
dānāśrīnāītīsātīkāliḥ suptijyān pñjāyet sada.

III, 76, we find them occurring in connection with this particular subject, the acquisition of friends.<sup>72</sup>

The following Śloka in the Harivarsha, which is found a little modified in the Pañcatantra, III, 256, is also ascribed to Uśanas :—“ The residue of an enemy, of debt, of fire, O prince ! (although scattered) when united, may grow again ; therefore one should not allow a residue to remain.” The Śukraniti contains nearly the same idea in the same words.<sup>73</sup>

The Kāmandakiya (XII, 67) says that Manu mentions in his law book, that the number of ministers at the court of a king amounts to 12, that Brhaspati says it amounts to 16, and that Uśanas fixed it at 20.<sup>74</sup>

In the Śukraniti II, 69 and 70 are as a matter of fact 20 ministers mentioned ; e.g., the family priest, vicegerent, chief secretary, war minister, diplomatist, chief justice, learned adviser, finance minister, counsellor and ambassador ; each of these 10 has a substitute, so that the entire number of ministers amounts to 20.<sup>75</sup>

<sup>72</sup> See Pañcatantram, II, 47.

Sakṛtyam viṣṇuguptasya mitraptibhargavasya ca  
bhṛaspati svīvtao nitiśandhistridha sīhitāḥ.

<sup>73</sup> See Harivarsha, XVIII, 136, 137.

136. Na ca ṣeṣam prakurvantī panarvairabbhayat nānā  
ghatayanti samalam hi śrutvenām upamām nyū.

137. Safruṣeṣam rpaṣeṣam ṣeṣam agneśo bhāṣṇra  
punārvardheta surbhūtīya tasmati ṣeṣam na sīṣyey.

Compare Śukraniti, III, 101-103.

101. Sarpo'gnīrdurjuno raja janataḥ bhaginīṣutāḥ  
rogah satrurāvamanyopyalpa ityupacarataḥ.

102. Krauryat taikopyadusvabhāvāt svāmitvāt putrikabbhayat  
svaparvrajapindadatvāt vṛddhibhītīya upacaret.

103. Roṣeṣam rogaṣeṣam satruseṣam na rakṣayet  
yacakadyaiḥ prarthitam na tikkṣeṣam cottaram vadet.

<sup>74</sup> Dvadasati Mānuḥ praha ṣodasieti Brhaspatiḥ.  
Uśana vimsatitiri mantriṇī mantrāmapḍalam.

<sup>75</sup> The ślokas in question are as follows :—

69. Purodhāca pṛatiidhīḥ pradhānaścivastathā  
mantrīcī pṛativivākāca paṇḍitaścī sumantrakaḥ ;

70. Amatyā dāta ityeta rājñāḥ prakṛtayo dāta  
dātamāṇḍāḍhikāḥ pūrvam dūtāntāḥ kramātāḥ smṛtaḥ.

The Kamandakiya (VIII, 22-23) ascribes to Uáanas the observation that the sphere round a king consists of twelve other kings of whom 4 are enemies, 4 friends and 4 neutrals.

A king X, e.g., is surrounded by three circles A, B, C, and in these circles resides one king in each of the four directions of the compass. Immediate neighbours are always hostile to each other, thus a king of the A line is an enemy to his neighbour in the B line, and the same feeling animates B towards his neighbour in C. As X is an enemy to the kings of the A line and the latter are enemies to the kings living in the B circle, X and the B kings become friends by being bound together by their hostility to the A kings, and X and the C kings are neutrals as, they have no interest in common, being too distant from each other. This very idea is well expressed in the Śukraniti, IV, I, 17-18.<sup>20</sup>

The whole Śukraniti is divided into four sections with a fifth supplementary section at the end.

The first section treats on the duties of a king; the second on the position of the crown prince; the third mainly on income and expenditure on servants and wages; the fourth is divided into seven chapters, treating respectively 1, on friendship and (enmity), 2, on the treasury, 3, on administration, 4, on revenue, arts and science, 5, on social laws, 6, on fortresses, and 7, on the army.

This last chapter is given afterwards entirely. It begins with a definition of the word army, goes on to state the different character of the troops; the mode of their movements, whether they march on foot, ride on horses and

<sup>20</sup> See Kamandakiya, VIII, 22, 23.

22. Udaśino madhyamaśca vijigīśeśa mandalam  
utanaśa mandalam idam praha dvadasaśrājakam.
23. Dvadasaśākā narendrapām arimitre pṛthak pṛthak;  
and Śukraniti, IV, I, 17, 18.
17. Āśaṇantat caturdikṣu sannikṛṣṭasāc ye nṛpah  
tatparastatpāt ye 'nyo kramat himabaliśrayah.
18. Satruñdagnamitrapī kramat te syuṣṭa prakrih  
arimītram udāśino'nantarastatparasparam.

elephants, or are driven in carriages. Then follows a description of the various kinds of soldiers, and afterwards a description of the animals and conveyances used for army purposes. This is succeeded by a classification of the arms used in warfare and such arms are described. Among these are mentioned firearms and a full account is given of the manufacture of gunpowder.<sup>51</sup> These two subjects will be discussed at large hereafter. After the description of weapons is finished, the different modes of warring, marching, and treating are gone into, and the political conduct of the king is described at length. No undue preference is given to any peculiar subject in particular, and this, if no other proof had been forthcoming, speaks for the genuineness of the work.

It is hardly imaginable that a work, which contains so many important revelations about the ancient state of the civil and military administration of India, and which is, as we have seen, often quoted by works of undisputed antiquity and genuineness—quoted too in a manner which precludes forgery, as the quotations are seldom quite literal—should have been written for the sole object of braggadocio, in order to prove to Europeans the mental superiority of the ancient Hindus by ascribing to them the original invention and manufacture both of gunpowder and firearms, and that the very object of the forgery, its *raison d'être*, should have been frustrated afterwards by keeping the work so zealously secret that except to a few initiated pandits, it was totally unknown to the public!

On the other hand would it not be a subject worthy of investigation for those who doubt the authenticity of the *Sukraniti* to prove its spuriousness, and to refute the statements brought forward in favor of its genuineness? Mere assertions do not possess any scientific value.

<sup>51</sup> Gunpowder and firearms are incidentally mentioned also in other parts of the *Sukraniti*; but in this chapter both are described fully.

The language is simple, terse and antiquated, and in many instances the age of the work manifests itself in this respect. The Śukranīti contains also a large number of half verses and this is another circumstance speaking for its antiquity. In some places it contradicts the precepts of Manu, and as it is not likely that any Hindu would dare to oppose that most venerated law book, we may conclude that the compilation of our work is anterior to or at least contemporary with our revision of Manu's Dharmasāstra.

Sukra is regarded as the preceptor of the Demons, and though this tradition should be received *cum grano salis*, nevertheless the work written by or ascribed to him may have been regarded as the special law book of the warriors or Kṣatriyas. It was also for this reason originally not much patronised by the Brahmins, but now it is held in great respect by them.<sup>52</sup>

### CHAPTER III.

#### ON THE USE OF GUNPOWDER AND FIREARMS IN GENERAL.

No invention has, within the last five hundred years, been so influential in shaping the destinies of nations as the introduction of gunpowder and of firearms into warfare. The fate of whole realms depended, and depends to a certain extent even now, on the proficiency attained by the comba-

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<sup>52</sup> A copy of the Śukranīti was bought for the Government MSS. Library by my predecessor Mr. Sōgiri Sastrī as far back as 1871, but as long as I could consult only this copy, I could not well attempt to print it. Since that time I have received three more Manuscripts of this work from other parts of the country, which, though coming from different places and being written in different characters, are in very close agreement. A printed specimen published a few years ago by H.H. the Holkar has also come into my hands, and though it is a print abounding with mistakes, it serves me as another Manuscript.

The Śukranīti is now very scarce, and its owners do not like to part with it. I have therefore been obliged to get two MSS. copied, as I could not obtain the originals.

tants in the manufacture of better gunpowder or of projectile weapons of superior quality.

When missiles despatched from projectile weapons by means of gunpowder easily penetrated the knights clad in their strongest suit of armour, while the persons who used those arms were quite beyond the reach of their physically perhaps stronger foes, no wonder that armour was discarded in course of time, and the mediæval knight, who had hitherto without much difficulty maintained his supremacy single-handed against a multitude, found his former superiority gone, and disappeared gradually from the scene. Fortresses, which, before the invention of gunpowder, had been regarded as impregnable, lost their reputation as safe strongholds, and new schemes and practices had to be devised to obviate the difficulties of the altered situation.

Slight improvements in the construction or manipulation of firearms produced often most important alterations in the political history of the world. Frederick the Great is said to have owed in his earlier campaigns many of his victories to the quicker mode of loading adopted by the Prussian army; and it is not so long ago that we ourselves have witnessed a rearrangement of the map of Europe, partly effected by means of superior weapons being used by one nation against another. It is therefore natural that a general interest should be more or less taken in all important advances made in this subject, which, if well studied and applied, provides a nation with the means of ensuring its freedom, independence, and supremacy, so long as actual strength is regarded as the only recognized claim to independent political existence.

The invention of gunpowder has been ascribed to different individuals belonging to different countries, and as the question as to its authorship and antiquity is still an open one, we shall discuss this mooted point and shall endeavour to prove that the oldest documents mentioning and describ-

ing gunpowder are found in India and written in Sanskrit, and that the use of gunpowder and its application to the discharge of missiles from projectile weapons was a well known fact in ancient India, corroborating so far the opinion of those who always pointed out India as the original seat of its invention. The question whether China received the knowledge of gunpowder from India, or *vice versa*, cannot be touched here, as there do not exist any trustworthy documents bearing on this question. No Chinese work on this question can, with respect to antiquity, be compared with the *Sukraniti*, so that even if the Chinese should have independently invented gunpowder, the claim as to priority of invention will certainly remain with India.

A Franciscan monk, Berthold Schwarz, whose real name was Constantin Ancklitz or Anklitz, is generally, especially in Germany, credited with the invention of gunpowder, which, according to tradition, was made at Freiburg in the Breisgau about the year 1330. No doubt Black Barthel, *der schwarze Barthel*, as he was popularly called, dabbled in alchemy and was very fond of chemical experiments, during one of which he was blown up and nearly killed by an explosion of a mortar he was experimenting upon. Eventually he was accused of practising magic and necromancy and sent to prison. A grateful posterity erected in his honour a statue on the spot where the Franciscan Convent of Freiburg had once stood; an honour which he may have richly deserved for many reasons, but surely not for being the original inventor of gunpowder.

Many years previously to Berthold Schwarz, another Franciscan monk, Roger Bacon (1214-94), the Doctor Mirabilis of Oxford, had already pointed out the peculiar qualities of saltpetre, as exemplified in the action of gunpowder. Like every chemical scholar in those times he became an object of clerical suspicion, was incarcerated by his superiors on the plea of practising forbidden magic and

though for a time released by Pope Clement IV, he was again imprisoned under Pope Nicholas III. Bacon suggests that gunpowder should be used in war, as it would supply a powerful means for the destruction of hostile armies. He notices particularly the thunderlike noise and lightninglike flash at the time of its explosion; its application to crackers and fireworks is a subject, he was well acquainted with. He states in his book on the secret works of art and nature two of the principal ingredients which compose gunpowder—saltpetre and sulphur—but not wishing, according to the mysterious inclination of those days, to make the secret known, he uses in his prescription the obscure expression *lava nope cum-ubre*, which has been later ingeniously found out to stand for *carbonum pulcere*.<sup>53</sup>

It is now generally supposed that Roger Bacon learnt the secret of the manufacture of gunpowder while he was travelling in Spain, where it was pretty well known among the Moors, who were not only the most learned nation at that period, but who, through religious and national tradition were intimately connected with their more eastern co-religionists and compatriots. An Arabic treatise on gunpowder written in 1249 is up to this day preserved in the Library of the Royal Escorial.

In the National Library at Paris is preserved a work ascribed to one Marcus Graecus. It was published at Paris in 1806 as *Liber ignium ad comburendos hostes, auctore Marco Graeco*. About the nationality and the life of this Marcus Graecus nothing is known for certain. According to some he lived in the 9th, according to others in the 13th

<sup>53</sup> "Sed tamen salis petras, lava nope cum ubre et sulphuris, et sic facies tonitrum et coruscationem, si sciatis artificium," in Roger Bacon's work "*De secretis operibus Artis et Naturae et de nullitate magiae*." At another place he alludes to fireworks: "Ex hoc ludicro puerili quod sit in multis mundi partibus scilicet ut instrumento facto ad quantitatem pollicis humani ex hoc violentia salis qui salpetrae vocatur tam horribilis sonus nascitur in ruptura tum modicas pergamentas quod fortis tonitru rugitum et coruscationem maximum sui luminis jubar excedit."

century. The accuracy of the name is even doubtful, as he is also called Marcus Graecus instead of Graecus. If the latter appellation be the more correct one, it might perhaps be surmised that the work was originally written in Greek. Saltpetre occurs three times in his book, as *sal petrosum*; *lapis qui dicitur petra salis*, and as *sal petrum*.<sup>\*\*</sup> According to Marcus Graecus the composition of gunpowder is two parts of charcoal, one part of sulphur, and six parts of saltpetre.

Towards the end of the seventh century the architect Kallinikos of Heliopolis, when Constantinople was besieged by the Arabs in 668, manufactured big tubes made of iron or of other metals, formed like big beasts with gaping jaws, out of which were thrown iron, stones and combustibles. In consequence of the havoc caused by these projectiles the siege of the city was raised. The Greeks kept, it is said, the secret of the composition for four centuries, when it was betrayed to the Saracens, who availed themselves of it during the crusades at Jerusalem and also at Damietta. If the ingredients are rightly mentioned, e.g., by the Byzantine princess, Anna Komnena, who wrote the history of her father Alexios, they consisted only of resin, oil, and sulphur, and not of saltpetre. As Kallinikos hailed from Heliopolis, the place otherwise known as Baalbec, and as the Greek fire seems to have been a liquid, the most important ingredient of which was naphtha, which was well known to, and was much made use of by the Eastern nations,—as it is found near Baku on the Caspian Sea, (where the gas, as it escapes from fissures in the earth in the neighbourhood of the oilsprings, has been burning uninterruptedly for centuries and is worshipped by Parsees,) in the island of Tchalekin on the other side of the Caspian Sea opposite to Baku, in Mesopotamia, in Kurdistan, in North India, and in China—it is probable that Kallinikos only introduced this powerful com-

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<sup>\*\*</sup> See John Beckmann's History of Inventions and Discoveries under the article "Saltpetre, Gunpowder, *Aqua fortis*."

bustible into Western warfare, and that it was before his time employed in the East. At all events it was a most powerful preparation for the destruction of the enemy, and the terror it spread among the troops of Louis IX before Damietta is graphically described by contemporaries. It seems to have even been used in European wars, for, according to Père Daniel, the king Philip Augustus of France had brought home some of it from Acre, and used it at the siege of Dieppe against the English ships there at anchor.<sup>45</sup> It is said that Napoleon the Great became acquainted with the real composition of the Greek fire, but that he pronounced it inapplicable; one of the chief reasons for his decision being probably the fluid state of the combustible.

There exists an old tradition, according to which the Arabs possessed at an early date a knowledge of the manufacture of gunpowder, and that they obtained it originally from India, with which country they had an active commercial intercourse. They are even said to have improved on the original manufacture. That the Arabs received their earliest gunpowder supplies from India, and that this country was the original seat of its invention was very strongly urged so early as the end of the last century by M. Langlès in a paper read in the French Institute in 1798. This opinion is also upheld by Johann Beckmann (1739-1811), whose well known "History of Inventions and Discoveries" (*Beiträge zur Geschichte der Erfindungen*) has passed through many English editions. He says there: "In a word, I am more than ever inclined to accede to the opinion of those who believe that gunpowder was invented in India, and brought by the Saracens from Africa to the Europeans; who, however, improved the preparation of it, and found out different ways of employing it in war, as well as small arms and cannons."

\* See Projectile Weapons of War and Explosive Compounds; by J. Scovron, M.A., third edition, London, 1858, pp. 50-60.

Having discussed so far the question as to the invention of gunpowder, we now turn to its application in war by means of projectile weapons. The first country in Europe where such projectile weapons were used was Spain. They are mentioned by Arabian writers as far back as 1312, and were used in 1323 at the siege of Baza. The French seem to have employed them since 1338 at first for dismantling castles and fortifications only, and not in the battle field as Edward III of England is said to have done in 1346 at Crecy. The French writers seem to have been indignant at the employment of such destructive arms against human beings, for one of them says : " On ne faisoit point encore usage en France en 1347 de cette arme terrible contre les hommes ; les François s'en étoient bien servis en 1338, pour l'attaque de quelques chateaux, mais ils rougissaient de l'employer contre leurs semblables. Les Anglois, moins humains, sans doute, nous devancèrent et s'en servirent à la célèbre bataille de Crecy, qui eut lieu entre les troupes du roi d'Angleterre, Edouard III, qui fut si méchant, si perfide, qui donna tant de fil à retordre à Philippe de Valois, et aux troupes de ce dernier ; et ce fut en majeure partie à la frayeur et à la confusion qu'occasionnèrent les canons, dont les Anglois se servoient pour la première fois, qu'ils avoient postés sur une colline proche le village de Crecy, que les François durent leur déroute."<sup>\*\*</sup> These projectile weapons were formed like tubes and were therefore called *cannons* from *canna*, a reed. In German they were known as *Röhr*, which word has the same meaning. The small firearms were originally without a stock, and as they were very heavy, they used to be placed on a fork when they were discharged. The *arquebuse* with a wheel was first used by Emperor Charles V and Pope Leo X in the year 1521 at the siege of Parma against Francis I, King of France.

<sup>\*\*</sup> See Projectile Weapons of War, p. 117.—In the Library of Christ Church, Oxford, is preserved in a beautifully illuminated Manuscript, which dates from 1338, and which has been in the possession of Edward III, the picture of an armour-clad warrior, who fires a bottle-shaped canon.

The same Martin Bellay who states this fact, further informs us that the German horse or *Reiter* were the first, who were armed with pistols, and that those troopers were thence called pistoliers. *Musket* is a still later weapon. It has got its name from the French *mousquet* (Latin *muschetus*, sparrow hawk).<sup>57</sup> The Duke of Alva is reported to have first used them in the Netherlands.

The gun was originally fired by the simple application of a lighted match. The clumsiness and uncertainty of this procedure especially during storms and rains suggested improvements. At first a cock was added to give security to the hand, afterwards a firestone was inserted into this cock and a small wheel was fastened to the barrel. The wheel lock is said to have been invented in 1517 at Nürnberg in Bavaria. The firestone first used was not the flint which was employed later, but the pyrites or marcasite. The match was nevertheless not altogether discarded, as the stone often missed fire, and it was retained together with the wheel. Flint locks were of a far later origin. They were first used in 1687 by the Brunswickers, and they were introduced into England under William III during the years 1692-93. These continued improvements, to which we may add the modern percussion lock, the needle-gun, and the breech-loader, were mainly necessitated by the perilous and defenceless position a soldier was in as soon as he had discharged his gun against an enemy, who chose this moment as convenient to attack him. The greater the rapidity in loading, the greater is the efficiency of the fireweapon.

If we now turn our attention from the West to the East we find that powder and firearms seem to have been much earlier used in the latter than in the former.

It is recorded that in the battle near Delhi fought between Tamerlane and Sultan Mahmud, the latter opposed his

<sup>57</sup> According to others it was invented at the end of the fifteenth century by one Mekelta of Velletri, after whom it is said to have been named.

enemy with 10,000 horsemen, 40,000 men on foot, and a great number of elephants clad in armour. On the top of those elephants were big howdahs from which the sharpshooters flung fireworks and rockets on the troops of Timur; and on the sides of those elephants marched "des jetteurs de pots à feu et de poix enflammée ainsi que des fusées volantes pointées de fer, qui donnent plusieurs coups de suite dans le lieu où ils tombent."<sup>88</sup> According to Clavijo, Timur was beaten in the first engagement through those 50 mailed elephants, but on the following day Timur took many camels and loaded them with dry grass placing them in front of the elephants. When the battle began, he caused the grass to be set on fire and when the elephants saw the burning straw upon the camels, they fled.<sup>89</sup> When attacking Bhatnir, Timur's troops were received in a similar manner for "the besieged cast down in showers arrows and stones and fireworks upon the heads of the assailants."<sup>90</sup>

According to Ferishta, Hulaku Khan, the founder of the Mogol Empire in Western Asia, sent in 1258 an ambassador to the King of Delhi, and when the ambassador was approaching he was received by the vizir of the king with a great retinue, and among the splendid sights were 3,000 fire cars. About the same time we are informed that in the wars between the Chinese and the Mogol invaders a kind of fire-arms was used. It seems to have been like a rocket. It was called impetuous *fire dart*. "A nest of grains—case of chick peas—was introduced into a long tube of bamboo, which, on being ignited, darted forth a violent flame, and instantly the charge was projected with a noise like that of a *pao*, which

<sup>88</sup> See *Histoire de Timur-bez*, par Cherifeddin Ali d'Yezd, traduite par le feu M. Petits de la Croix. 1728, III, p. 94.

<sup>89</sup> See *Narrative of the Embassy of Ray Gonzalez de Clavijo to the Court of Timur at Samarcand*. London, 1859, p. 163.

<sup>90</sup> See *Malfuzat-i-Timuri* in Sir H. M. Elliot's *Histories of India*, III, 424.

was heard at about the distance of 150 paces."<sup>21</sup> Deguignes says that the Mogols used in 1275 a similar weapon against the Chinese: "Les Chinois reprirent Tohangtcheou; et Tohang-chi-kiai avec un grand nombre de barques qu'il avait ramassées, s'approcha pour combattre les Mogols. Mais At-chou avec des flèches enflammées, y fit mettre le feu, et les troupes Chinoises, après une vive résistance, se précipitèrent dans le fleuve."<sup>22</sup> At another place Deguignes under the year 917 says that the Kitans<sup>23</sup> carried with them a combustible which they had received from the King of Ou, and that this fluid burnt even under water.<sup>24</sup> Arabian reports inform us that the Arabs used in India *Āśā-bāzī*, like those employed by the Greeks and Persians. Ferishta tells us that in the battle which Mahmud of Ghazna fought near Peshawar with Anandapal in 1,008 cannon (*tap*) and muskets (*tufang*) were used by Mahmud.<sup>25</sup> Colonel Tod says in his Annals of Rajasthan: "We have, in the poems of the Hindu poet Chand, frequent indistinct notices of fire-arms, especially the *nalgola*, or tube ball; but whether discharged by percussion or the expansive force of gunpowder is dubious. The poet

<sup>21</sup> See On the early use of Gunpowder in India; in "The History of India" the posthumous papers of the late Sir H. M. Elliot, K.C.B., edited by Professor John Dawson, vol. VI, p. 460. Ibidem in note 2 is a quotation from Père Gaubil's "Histoire de Géochisan," p. 69. Les Mangous se servirent alors de *pao* (ou canons) à feu. On avait dans la ville des *pao à feu*. . . Je n'ai pas osé traduire par *canon*, les caractères *pao*, et *feu*, un de ces caractères a à côté le caractère *ché*, *pierre*, et c'était une machine à lancer des pierres. L'autre caractère est joint au caractère *feu*, et je ne sais pas bien si c'était un canon comme les nôtres. De même, je n'oserais assurer que les boulets dont il est parlé se jetaient comme on fait aujourd'hui.

<sup>22</sup> See "Histoire générale des Huns, par M. Deguignes, III, 162.

<sup>23</sup> On the Khitans see my book "Der Presbyter Johannes in Sage und Geschichte," pp. 121-126.

<sup>24</sup> See Deguignes, II, p. 61: "Ils (les Khitans) apportaient avec eux une matière inflammable, dont le Roi de Ou leur avoit donné la connaissance, c'était une matière grasse qui s'enflammait et qui brûloit au milieu des eaux."

<sup>25</sup> See The History of India, edited from Sir H. M. Elliot's papers by Prof. John Dawson, VI, 219 and 454.

also repeatedly speaks of "the volcano of the field," giving to understand great guns; but these may be interpolations, though I would not check a full investigation of so curious a subject by raising a doubt." <sup>22</sup> Muhammed Kasim used such a machine or *manjasiik* when besieging in A.H. 93 (A.D. 711-12) the port of Daibal. The first thing done with this machine was to shoot down from the top of the high pagoda a long pole surmounted with a red cloth.<sup>23</sup> The prophet Muhammed is also credited with having used the *manjasiik* when besieging Taif in the ninth year of the Hegira, and according to Ibn Kotaibah the projectile weapon in question was already used by Jazynah, the second King of Hyrah, whose date is fixed about the year 200 A.D.<sup>24</sup>

Passing over the statements of Dio Cassius and Johannes Antiochenus, that the Roman Emperor Caligula had machines from which stones were thrown among thunder and lightning, we come to the statement of Flavius Philostratos, who lived at the court of the Emperors Septimius Severus, and Caracalla. In his history of Apollonios of Tyana, he mentions, that when that extraordinary man was travelling in India, he had among other things learnt the real reason why Alexander the Great desisted from attacking the Oxydraceae. "These truly wise men dwell between the rivers Hyphasis and Ganges; their country Alexander never entered, deterred not by fear of the inhabitants, but, as I suppose, by religious motives, for had he passed the Hyphasis, he might, doubtless, have made himself master of all the country round them; but their cities he never could have taken, though he had led a thousand as brave as Achilles, or three thousand such as Ajax, to the assault; for they come not out to the field to fight those who attack them, but these holy men, beloved by the gods, overthrew their enemies with tempests and thunderbolts shot from their walls. It is said that the Egyptian

<sup>22</sup> See Annals of Rajasthan, I, 310.

<sup>23</sup> See Elliot's Posthumous Papers, VI, 452.      <sup>24</sup> Ibidem, p. 461.

Hercules and Bauchus, when they overran India, invaded this country also, and having prepared warlike engines, attempted to conquer them; they in the meanwhile made no show of resistance, appearing perfectly quiet and secure, but upon the enemy's near approach they were repulsed with storms of lightning and thunderbolts hurled upon them from above." In the apocryphal letter which Alexander is said to have written to Aristotle, he describes the frightful dangers to which his army were exposed in India, when the enemies hurled upon them flaming thunderbolts.<sup>100</sup>

Firdusi ascribed to Alexander this expedient when opposed by Porus. While Sikander, according to the author of the Shah-Nama, was marching against Porus (Fur) his troops became so frightened when they perceived the numbers of elephants which Porus was sending against them that Alexander consulted his ministers how to counteract this foe. Their advice was to manufacture an iron man and an iron horse, place the former on the latter, fix the horse on wheels, fill them both with naphtha and propel them towards the elephants, where they would explode with great havoc.

Such a stratagem is ascribed by the Franciscan monk Johannes de Plano Carpini to Prester John when he was fighting against the Tatars. In my monograph on Prester John I have pointed out to what special event it may probably refer.<sup>101</sup>

<sup>100</sup> See Philostratus *Tà eis τὸς Τούρτιον Ἀρετάτοις*. The words used by Philostratus are *σποντα κάτω στρεφόμενα* (II, 16), and *ταῦρον πολεμόντας αὐτοὺς τὸν ταῦρον* (III, 3).—Compare Projectile Weapons of War, pp. 83 and 84.

<sup>101</sup> See Der Presbyter Johannes in *Sage und Geschichte*, pp. 93 and 94.  
"Johannes Presbyter venit contra eos (Tataros) exercitu congregato, et faciens imagines hominum capreas in sellis posuit supra equos, ponens ignem interius, et posuit homines cum follibus post imagines capreas supra equos; et cum multis imaginibus et equis taliter praeparatis venerant contra praedictos Tartaros ad pugnam; at cum ad locum prelli pervenissent, istos equos unum juxta aliud praemisserunt, viri autem qui erant retro, posseverunt neccio quid ignem qui erat in praedictis imaginibus et cum follibus fortiter sufflaverunt; unde factum est quod ex igne graeco homines comburebantur et qui, et ex fumo aer est denigratus."

We read in the extracts remaining from the work of Ktesias<sup>101</sup> on India, that an oil was prepared from a big worm, which lived in the deep bed of the river Indus. This animal had two big tusks (*jaws?* *branchis*), slept during the day in the muddy sands of the banks of the rivers, which it left at night in search of food, seizing big animals, which it devoured. According to C. Plinius Secundus this worm catches even elephants.<sup>102</sup> When such an animal has been caught—which is generally done by binding a sheep or a goat to a strong pole—it is kept suspended in the sun for thirty days, that the oil may drip from it, and this oil was collected in earthen pots. Each worm supplied a quantity equal to ten measures of oil. This was sent to the king in sealed jars. The oil had the power to ignite every thing and was for this reason used especially at sieges. Jars filled with this material were thrown into besieged towns and whatever they touched ignited as soon as they broke. Nothing but rubbish and sweepings could extinguish the flame, when once ignited. Neither man, nor animal, nor anything could

<sup>101</sup> See Photii Myriobiblion, 1653, p. 153-156.

"Οὐδὲ τῷ ποταμῷ τὸν ἵδην σπάλκει γίνεται, τὸ μὲν εἶτα σῶν τῷ ταῖς συκαῖς εἰσθε γίνεσθαι, τὸ δὲ μῆκος, πάχεως ἕτερος τοῦ μείζονος δὲ καὶ θάρρους. τὸ δὲ τάχις βακτρέαν ταῖς μάδας φασὶ ταῖς χρήι τερβιστέον. ἔχουσι δὲ δόξας δύο, ἡνὶ δινοὶ καὶ δινὶ εἰδῶν καὶ δύοι δὲ λάβονται τοῦ δόξας, καρεσθίουσι. καὶ τὸ μὲν ἄγραν ἐπὶ τῷ λαζὶ τοῦ ποταμοῦ διατάσσεται τῷ δὲ νοστὶ ἀγέργουν. καὶ τούτους δὲ ἡ εὐτύχη ταῦτα ἐν τῇ γῇ, δοτὶ δὲ κακήλῃ, καὶ δύοι σπαλαβόντες εἰς τὸν ποταμὸν, καὶ πάστα πατεσθεῖ, πλήρει τὰς κοκκιές, ἀγρούς δὲ ἀγροτηργυρούμενα, ἤριστον δὲ ἀργα πολυποτεστέον τῷ ἀγροτηργυρῳ, καὶ ἀλόστρους οὐδεποτὲ ἀνέργως. ἀγροβάστες δὲ τράκοντα ἄγραν κραμάσσιν αὐτον. καὶ ἀγρεῖς βεντίδαις, καὶ ἀριὴς ἀτροτοῦ, δοτεῖ δικτυάς δεσμοὺς τὸν ἀλέθον. δοτεῖ δὲ παρδαλίδων αἱ τράκοντα ἄγραι, ἀποβάστενται τὸν σαλαγκα, καὶ τὸ θάλαιον ἀσφαλισάμενοι, ἔχουσι τῷ βασικέοι μάρτη τῶν Ἱνδῶν. ἀλλαγὴ δὲ σοὶ Κροτοί δὲ αὐτοῦ ἔχουν, τούτο τὸ θάλαιον, ἀριὴ δὲ ἀντιχειρή, διατίτει· καὶ κατασθλέγει έδανα καὶ ζεῦ. καὶ δάλιοι οἱ οἰλέντοι εἰ μὴ πηλῷ ταλαιπώ τοι καὶ παχεῖ.

<sup>102</sup> See Caii Plinii Secundi Historia Naturalis, Libr. IX, 17: "In eodem (Gange flumine) esse Statius Sebosus haud medico miraculo affert, vermes branchis binis, sex cubitorum, cœruleos, qui nomen a facie traxerunt. His tantas esse viros, ut elephantes ad potum venientes, mordicus comprehensa manus eorum abstrahant." Just previously Plinius had spoken of the Delphinus Gangeticus (plataniata).

withstand this terrific combustible. Philostratos confirmed these statements. According to him this worm-like insect lives in the Hyphasis, and the flame caused by the fire can only be subdued by being entirely covered with dust. The king is the sole owner of all these animals. Ktesias, Aelianos, and Philostratos, all three agree in the name of this *worm*, which they call Skolex ( $\sigmaκόληξ$ ). Lassen scorns the possibility of such a worm being in existence, and ascribes the whole description to the imaginative tendency so prevailing in the mind of Oriental nations. The late Professor H. H. Wilson takes a more practical view of the case, by identifying the worm in question with the Indian alligator, and remembering that the oil and the skin of the alligator were considered in ancient times to possess most wonderful qualities, and that the greater part of the other description tallies with the outward appearance and natural habits of the alligator. Wilson seems to have fixed on the right animal.<sup>103</sup> Nevertheless so far as the name  $\sigmaκόληξ$  is concerned nobody so far as I know has tried to explain it. An animal of seven cubits in length, and of a breadth in proportion to its size, could hardly have been called a *worm*, unless the original name of the beast in question resembled the Greek word *Skolex*. The word represented by the Greek word *Skolex* is no doubt the Sanskrit term *culuki*, *cullaki* (with the variations *ulupin* or *columpin*). *Culukin* is derived from *culuka*, mire, it is therefore an animal which likes to lie or to live in mud. The *cullaki* is described in Sanskrit works as somewhat similar to the *Situmāra*, which is identified with the *Delphinus Gange-*

<sup>103</sup> See Indische Alterthumskunde von Christian Lassen, II, pp. 541 and 542. "Unter diesen Erzeugnissen der überchwänglichen Einbildungskraft der India möge hier noch besonders gedacht werden, das aus im Indus lebenden Würmern gewonnene Oals, welches die Eigenschaft besessen haben soll, alles anzusaugen und zu der Ansicht verleitet hat, das die alten India Feuerwaffen gekannt hätten. Diese Nachricht muss im Gegenthell gebraucht werden, um zu beweisen, dass schon zur Zeit des Ktesias dichterische Vorstellungen, welche den Indiaen eigenthümlich sind, den Persern bekannt geworden waren." Compare also Elliot's History of India, VI, pp. 478-80.

ticus, though its name denotes a *childkiller*. The cullaki is therefore a large aquatic animal, which because it lives principally in water, is called a fish ; and as the crocodile prefers as its place of abode the muddy banks of a river, the name *cullaki* applies most appropriately to it.<sup>104</sup>

It is a peculiar coincidence that in Telugu an iguana is called *udumu*, and the lizard is generally called *udumpile* or young iguana ; the Tamil name of the same animal is *udumbu*.

The identity is thus clearly established between the Greek word *stolex* (as the Greeks had no nearer sound than *sk* to resemble the palatal *c*), the Sanskrit words *cukuki* (*cullaki*, *columpi*, and *ulupi*), and the Dravidian *udumbu* and *udumu*.

On the west coast of India oil is even now obtained from big fish by letting their carcasses lie in the sun and allowing the oil thus to ooze out, which process creates all the while an unbearable stench. With respect to the quantity of oil gained out of a fish like a porpoise and of a crocodile, the superiority rests doubtless with the former, though a well-fed and plump gavial possesses no doubt likewise a considerable amount of oily substance.<sup>105</sup>

The iguana resembles in its shape a crocodile, and both being named in the Dravidian languages and in Sanskrit by the word *columpi* alias *udumbu*, this term applies in the former languages to the smaller and in Sanskrit to the larger animal. The Sanskrit word *musalī* and the Tamil *mudalai* are also identical in origin, but they differ in so far that *musalī*

<sup>104</sup> The author of the *Sabdaratnavali* explains it by *śitumārdkṛtisatrya*, i.e., a fish which resembles the porpoise ; and in Hemacandra's *Anekārtha-saṅgraha* we read *cullaki kuppikā bheda śitumāra kallinare* ; Vitvaprakata and Medinkara have nearly the same explanation : *Cullaki* (*cullaki*) *śitumāropi kuppikābheda kallinare*, i.e., culuki is a pot ; a porpoise (and) a kind of race.

<sup>105</sup> The oil of the crocodile is mentioned in Indian Medical Works, and it is in the list of Dr. Forbes Watson included among the commercial products of India.

denotes a house lizard and *mudalai* a crocodile. In fact the Sanskrit *musalī* and *culumpin* (*culukī*) correspond according to their meaning to the Tamil *uḍumbu* and *mudalai*. The inference to be drawn from this fact is obvious.

The *culukī* is in Sanskrit only a large sized animal; a worm, especially an earth-worm, is called a *kiñculuka* or *kiñcilaṅka* or *kiñcila*, i.e., a little culuka.

No doubt the description of Ktesias is in many respects inaccurate, but I hope to have been able to trace the thread of truth which runs through it.

As oil, especially boiling oil, is used in Indian warfare, the subject is of particular interest in this inquiry.

#### CHAPTER IV.

##### INDIA THE HOME OF GUNPOWDER AND FIREARMS.

In every inquiry which is conducted with the object of proving that a certain invention has been made in any particular country it is of the utmost importance to show that so far as the necessary constituents of the object invented are concerned, all these could be found in the country credited with such invention.

The ordinary components of gunpowder are saltpetre, sulphur, and charcoal.

I. It is now generally admitted that the *nitrum* which occurs in the writings of the ancients was not saltpetre, but *natron*, i.e., sodium carbonate; the latter word is nowhere extant in Greek or Roman literature, though the words *nitrum* and *natron* are no doubt in their origin identical.

The word *nefer* occurs twice in the Bible. It is described as an alkali, which was used as soap: "For though thou wash thee with nitre, and take thee much sops, yet thine iniquity is marked before me, saith the Lord God" (Jerem. ii. 22); and "As he that taketh away a garment in cold

weather, and as vinegar upon nitre, so is he that singeth songs to an heavy heart." (Proverbs. xv. 22.)

Herodotus mentions nitrum as litron (*λίτρον*) in his description of the embalming of dead bodies as practised in Egypt.<sup>106</sup> Pliny repeatedly speaks of nitrum, and Galen<sup>107</sup> records that it was burnt to strengthen its qualities. This would have had no effect if applied to saltpetre. There is no doubt that had the ancients known saltpetre, its oxydizing properties would soon have been discovered by them, which is the most important step towards the invention of gunpowder.

The word *natron* was introduced into Europe from the East by some European scholars who had been travelling there about the middle of the sixteenth century and who had thus become acquainted with this salt;<sup>108</sup> and though the word *natron* was originally used there for denoting saltpetre, its other form *nitrum* has been since assigned it; however, as we have seen, the nitrum of the ancients is quite different from our nitre, which is saltpetre (*potaassium nitratum*).

Native saltpetre, i.e., saltpetre produced by entirely natural processes is very scarce, so much so that the inventor of *nickel*, Freiherr Axel Friedrich von Cronstedt (1722-65) was unacquainted with it. It is found especially in India, Egypt, and in some parts of America. Since the introduction of gunpowder in European warfare saltpetre has been manufactured wherever native saltpetre could not be obtained in sufficient quantities. It was obtained, from the efflorescence on walls (*sal murale*) and other sources, this exudation,

<sup>106</sup> Herodotus, II. 86, τὰ δὲ καθάπτει ταριχέσσως λίτρη, and 87, τὰ δὲ σόδας τὸ λίτρον καταρτίζει.

<sup>107</sup> Nitrum autem proprius ad aphronitrum accedit, utpote ex natione tenius redditum (*λευκομερέστερον*). Ceterum nitro nato simul et non nato . . . in talibus morbis uti consuevimus (*λίτρης δὲ κακουαδρή τε καὶ διαδρητή καὶ ἄσητη τούτοις χρήσεσθαι*. Galenus, *De Simplic. Med. Facult.* IX. Dioscurides says also that nitrum was commonly burnt. Compare Beckmann's History of Inventions, II. 433.

<sup>108</sup> See J. Beckmann, History of Discoveries, under the head Salipetre, Gunpowder, Aquafortis.

together with all the other artificial modes of producing saltpetre, became a perquisite of the sovereign, and this *saltpetre regale* grew in time into as obnoxious a burden to the people as the hunting regale. The saltpetre regale is first mentioned, as having been exercised in 1419 by Günther, Archbishop of Magdeburg.<sup>108</sup>

The little knowledge possessed by the ancients of chemical science, their utter ignorance of chemical analysis, accounts for their not improving, or rather for their not being able to improve the materials at their disposal and discovering the natural qualities of the different alkalis in their possession.

Throughout India saltpetre is found, and the Hindus are well acquainted with all its properties; it is even commonly prescribed as a medicine. India was famous for the exportation of saltpetre, and is still so. The Dutch, when in India, traded especially in this article.

In Bengal it is gathered in large masses wherever it effloresces on the soil, more particularly after the rainy season. In the Śukraniti saltpetre is called *saurcilaçana*, well shining salt. The Dhanvantarinighaṇṭu describes saltpetre as a tonic, as a sounchal salt; it is also called *tilakam* (black), *kṛṣṇalavapam* and *kālalavapam*. It is light, shiny, very hot in digestion and acid. It is good for indigestion, acute stomach ache, and constipation. It is a common medical prescription.<sup>109</sup>

2. Sulphur, the second ingredient of gunpowder, is also found in India, especially in Scinde; it is, and was, largely

<sup>108</sup> See J. Beckmann, History of Discoveries, under the head Saltpetre, Gunpowder Aquafortis.

<sup>109</sup> See Dhanvantarinighaṇṭu, in the Description of Salts.

Sovarcalavapaproktam rucyakam hrdayagandhakam  
tilakam kṛṣṇalavapam tāt kālalavapam smṛtam.

Laghu sauvarcalam pake viryoçgam vīradam kaṭu  
guhmačīlavibandhaghnam hrdayam surabhiocanam.

Amarakośa, IX, 43. Sauvarcale'ksparacake tilakam tāra mecake, and 119  
sauvarcalam sytt rucakam.

imported into India from the East. It is well known and received its name from its smell, being called *gandha* or *gandhaka*, smell, or in this case as it has not a good smell, rather from its *stench*. Its quality differs with its color, according as it is white, red, yellow, or bluish. Though sulphur is a very important part of gunpowder, gunpowder is in some parts of India even prepared without it. Sulphur was always in great demand in India, and in medicine it is often made use of.<sup>111</sup>

3. *Charcoal* is the third component part of gunpowder. Its constitution varies necessarily with the plants which in the different countries are used in its manufacture. In Prussia the coal of the alder, limetree, poplar, elder, willow, hemp, and hazel is used for powder. The charcoal of willow trees is especially esteemed on account of its excellent qualities. In the *Sukraniti* the *arka* (*Calotropis gigantea*), the *snuhi*, *snuhi* or *snuh* (*Euphorbia nerifolia*), and the *Rasona* (*Allium sativum*) are given as the plants whose charcoal is best fitted for gunpowder.

The *arka*, gigantic swallow wort, is a common bush growing in great quantities all over the country. It has a very good fibre, and is regarded by the natives as possessing most powerful and useful qualities. If the *arka* is used with discretion when iron is being forged, it contributes greatly to the excellence of the Indian steel. It is applied against epilepsy, paralysis, dropsy, &c. Its milky juice is smeared on wounds. It is a common sight in India to see suffering people applying it. The root is also used against syphilis. Its charcoal is very light and much used for pyrotechnical

<sup>111</sup> Śveto raktasāca pītāca nilāsceti catervidhah

gandhako varṇato jīyeo bhinnabbhinagupṭīrayah; Rājanighantu.  
It is cleaned by being boiled with castor oil or goat's milk.

Gandhakam palamstram cā lohapatrāntare kṣipet  
erandafalām sampṛtya pacet sūddhirbhavīyati.

Athava chagadagdhenā pacitam sūddhim spuyat.

*Sse* Sadavidyajivana.

preparations, and its qualities in this respect are so well known that every school boy is acquainted with them and prepares his own powder and mixture with this plant. Its name in Tamil is *erukku*, in Malayalam *eruka*, in Telugu *jillēḍu*, in Bengali *akant*, and in Hindustani *mudar* or *ark*.

b. The *snuki*, *snukh*, (triangular spurge, *kalli* in Malayalam, *pāśān kalli* in Tamil, *bontajammudu* in Telugu, *narsky*, *seyard* in Hindustani and *narsy* in Bengali) grows like the arka in waste places all over the Indian Peninsula. The qualities of this plant for pyrotechnic displays are as well known as those of the *Calotropis gigantea*. Dried sticks of this plant are scarce. It is also widely used as a medicinal plant, externally against rheumatism, and internally as a purgative; it is given to children against worms.<sup>112</sup>

c. The *rasona* is a kind of garlic; the Marathi equivalent is *lasopa*. Its botanical name is *Allium sativum*.

The prescription for making gunpowder is, according to the *Sukraniti*, as follows: mix 5 parts of saltpetre with 1 part of sulphur and 1 part of charcoal. The charcoal is to be prepared from the arka, snuhi, and other similar plants in such a manner that during the process the plants are so covered that the smoke cannot escape. The charcoal thus obtained must be cleaned, reduced to powder, and the powder of the different charcoals is then to be mixed. After this has been done, the juice of the arka, snuhi, and rasona must be poured over the powder which is to be thoroughly mixed with this juice. This mixture is to be exposed and dried in the sun. It is then finally ground like sugar and the whole mixture thus obtained is gunpowder.<sup>113</sup>

<sup>112</sup> With respect to the *snuhi* there exists a Tamil proverb, reflecting on its leafless state and big growth. It runs as follows: "There is no leaf to contain a mustard seed; but there is shade to shelter an elephant." (ஈடு விடுவே ; உறை சூரை கூடுமொன்று).—Compare also: The Useful Plants of India, by Major Heber Drury, 1858, p. 100-102.

<sup>113</sup> See Chapter V, sl. 141, 142.

The proportion of saltpetre varies, as some take 4 or 6 parts instead of 5, but the quantities of sulphur and charcoal remain unaltered.<sup>114</sup> These two are the usual receipts. Nevertheless the mixture is often changed when the gunpowder is to be of a particular color or if it has to serve a special purpose. The three principal ingredients are mixed in different proportion, and realgar, opiment, graphite, vermillion, the powder of magnetic iron oxide, camphor, lac, indigo, and pine-gum are added to the compound according as they are required.<sup>115</sup>

It seems peculiar that powder should not have been mentioned in Sanskrit works, but this is not an isolated instance of the silence observed in them on matters of historical importance. It is most probable that the very common occurrence of gunpowder interfered with its being regarded as something extraordinary and worth mentioning. The actual mode of preparing the different sorts of gunpowder may on the other hand have been kept a secret in certain classes, and such a state of affairs coincides with the Indian system of caste. Explosive powder either used for rejoicings as fireworks or for discharging projectiles was known in India from the earliest period, and its preparation was never forgotten; but as India occupied in ancient times such an isolated position, it is not singular that the knowledge of this compound did not earlier extend to other countries. However wonderful the composition and however startling the detonating effect of powder may be to the uninitiated outsider, to those who have been familiar with them from their earliest youth all seems natural and intelligible. India is the land of fireworks; no festival is complete without them, and as the materials for their manufacture are all indigenous, and of easy access, there is no difficulty in gratifying such desires.

<sup>114</sup> See Chapter V, sl. 143.

<sup>115</sup> See Chapter V, sl. 146-148.

In an extract taken from the *Mujmalut Tawdrikh*—which was translated in 1126 from the Arabic, into which language it had been translated a century previously from a Sanskrit original—we read: “that the Brahmins counselled Hāl to have an elephant made of clay and to place it in the van of his army, and that when the army of the king of Kashmir drew nigh, the elephant exploded, and the flames destroyed a great portion of the invading force. Here we have not only the simple act of explosion, but something very much like a fuze, to enable the explosion to occur at a particular time.”<sup>116</sup>

Vaiśampāyana mentions among the things to be used against enemies *smoke-balls*, which contained most likely gunpowder, and which were according to the explanation proposed by his commentator made of gunpowder.<sup>117</sup>

The following stanza, which is taken from the *Rajalakṣminārāyaṇapahṛdaya*, a part of the *Atharvaṇarahasya*, is no doubt a clear proof of the fact that the Hindus were familiar with gunpowder at a very remote period: “As the fire prepared by the combination of charcoal, sulphur, and other material depends upon the skill of its maker so also may thou, O ! representative of knowledge (Lakṣmi), by the application of my faith manifest thyself quickly according to my wish.”<sup>118</sup>

The Sanskrit word for gunpowder is *agnicūrpa*, fire-powder, which is occasionally shortened into *cūrpa*. The Dravidian languages have all one and the same word for medicine and gunpowder; in Tamil *marundu*, in Telugu *mandu*, in Kanarese *maddu*, and in Malayalam *maruna*.

<sup>116</sup> See the History of India of the late Sir H. M. Elliot, VI, 475; I, 107.

<sup>117</sup> See note 60.

<sup>118</sup> See *Rajalakṣminārāyaṇapahṛdaya*:

In galagandhadipadarthyoyat  
karturmantanugupq\_yathagnih  
caitanyarope mama bhaktiyogat  
mākṣanuropam bhaja rōpam Aśu.

Occasionally the word gun (*tapak*) is prefixed to remove any doubt as to what powder is meant. In Malayālam, the word *seṭi*, which means explosion, is prefixed. The Chinese crackers are called by the Tamilians *Sini seṭi*—Chinese crackers—to distinguish them from the Indian crackers. The word *marunda* is most probably derived from the Sanskrit past participle *mardita*, pounded, in the sense of different ingredients being pounded together, as a medicine powder. The meaning of gunpowder is then in a special sense derived from this general expression. The Dravidian equivalent of *curpsa* is *Svēndambu* in Tamil, *Sunnamsa* in Telugu, chalk.

From the subject of gunpowder we now turn to the weapon, to which it is applied, i.e., to the firearms.

Two kinds of firearms are described in the Śukranīti, one is of small size and the other is of large size. The former is five spans long,<sup>112</sup> has at the breech a perpendicular and horizontal hole, and sights at the breech and muzzle end of the tube. Powder is placed in the vent, near which is a stone, which ignites the powder by being struck. Many dispense with this flint. The breech is well wooded and a ramrod compresses the powder and ball before the discharge. This small musket is carried by foot-soldiers.

A big gun has no wood at its breech; moves on a wedge in order to be directed towards the object to be shot at, and it is drawn on carts.

The distance which the shot travels depends upon the strength of the material from which the gun is made, upon the circumference of the hole, and the gun's compactness and size. The ball is either of iron or lead or of any other material. Some big balls have smaller ones inside. The gun itself is generally of iron, occasionally also, as we

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<sup>112</sup> A span (*vitasti*) is the distance between the extended thumb and the little finger.

have seen in the Nitiprakāśika, of stone. The gun is to be kept clean and must be always covered.<sup>120</sup>

The term used for gun *nālika* (*nalika*, *nālīka*) is derived from the word *nāla* (*nala*), a reed, a hollow tube, which is another form for its synonyms *nada*, *nādi*, or *nāḍī*; in the same way *nālika* corresponds to *nāḍika*. Considering that the guns were in ancient times made out of bamboo, and that some bamboo guns are still used in Burmah, the name appears both appropriate and original. That the idea of bamboo being the original material for guns was still in the mind of the author of the Śukranīti seems to be indicated by his calling the outside of the stock of a gun *bark* (*tvak*).<sup>121</sup>

The gun is very seldom mentioned in Sanskrit writings, and even where it has been mentioned the meaning of those passages has been generally misunderstood. In all European Sanskrit dictionaries the word *nālika* or *nālīka* has been rendered as stalk, tube; arrow, dart, &c., but the third signification gun is not given; though it is one which is known to every learned Pandit. At the outset every body can easily see that the meaning of arrow and of gun can be rightly applied to a reed; the arrow is a reed which is discharged as a missile, and a gun is a reed out of which missiles are shot.

In the slokas 21 and 24 of our extract of the Śukranīti we read that a king should keep on a big war chariot two large guns, and in sl. 31 we are further informed that his beautiful iron chariot should be furnished with a couch, a swing, and among other things also with sundry arms and projectile weapons. This tallies with an account concerning the fortifications of Manipura, as described in Mr. J. Talboys Wheeler's "History of India:" On the outside of the city were a number of wagons bound together with chains, and in them

<sup>120</sup> See Śukranīti, Chapter V, sl. 135-39 and 149-151.

<sup>121</sup> See Śukranīti, Chapter V, sl. 139.

were placed fireworks and fire weapons, and men were always stationed there to keep guard." This statement is very important, and if substantiated would be of the greatest weight in this inquiry; but none of the Sanskrit Manuscripts of the Mahābhārata which I have searched contains this Śloka. However the above mentioned statement appears to rest on good authority, as the Śukranīti declares, that the wall of a fortress "is always guarded by sentinels, is provided with guns and other projectile weapons, and has many strong bastions with proper loop-holes and ditches."<sup>122</sup>

In the second stavaka of the Bhāratacampū composed by Anantabhaṭṭa, some three hundred years ago, we find the following simile: "The fierce warrior who killed his enemy with heaps of leaden balls, which emerge quickly from the gun lighted by a wick, is like the rainy season which killed the summer with hailstones which descend quickly from the rows of black clouds lighted by lightning."<sup>123</sup>

While the verse just quoted from the Bhāratacampū reveals an intimate knowledge of firearms, yet its apparent recentness may be alleged as an objection against its being produced as an authority for the existence of firearms in India at an early period. To obviate such further objections a sloka will now be given from an undoubted early poem, the Naisadha which describes the adventures of Nala and is generally ascribed to one Śriharṣa, a Brahman, who must not be confounded with Śriharṣa, the king of Kaśmīra. Its date goes back to the twelfth century, i.e., before the introduction of firearms into Europe. The verses in question run as follows: "The two bows of Rati and Manmatha are

<sup>122</sup> See The History of India, Vol. I, pp. 405 & 422; and read Appendix.—*Compare* also Śukranīti I, 238 and 266.

238. Yamikai rākṣito nityam naliñcitraita sahyutah  
Subahudṛḍhagulmaśca sugavākṣप्रपृAlikah.

<sup>123</sup> See Kālambodalimalikat kṣepadiptivarttyam  
sandhukṣitāt kṣepadi sadhvaniśasradhbhiḥ;  
varṣāmāstasagulikanikorah; kṣethrasib;  
gharmabhiyātīm kṣadhit ghanakalayodhah.

certainly like her (Damayanti's) two brows, which are made for the conquest of the world, the two guns of those two (Rati and Manmatha) who wish to throw balls on you, are like her (Damayanti's) two elevated nostrils."<sup>124</sup> To leave no doubt that guns are meant here, the learned commentator Mallinatha explains *nālīka* as the *Dronicāpa*, the projectile weapon from which the *Dronicāpasara*, a dart or a ball is discharged, an expression, we have already noticed in Vaiśam-payana's *Nitiprakāśikā*.<sup>125</sup>

On the other hand it is doubtful whether the *asani* missile, which was given by Indra to Arjuna and which made when discharged a noise like a thunder-cloud, alludes to firearms, as von Bohlen explains it.<sup>126</sup>

In the first book of the Śukranīti we find it stated that the royal watchmen, who are on duty about the palace, carry firearms. The Kāmāndakiya, acknowledged as one of the earliest works on Nitiśāstra, says that "Confidential agents keeping near the king should rouse him by stratagems, gunfiring and other means, when he is indulging in drinking bouts, among women, or in gambling."<sup>127</sup> It seems from this statement that the practice of firing guns as signals

<sup>124</sup> See Naipadika, II, 28.

Dhananj ratipaścābapayorudite viśvajayāya tadbhruvau  
nallke na taduccanāsike tvayi nālikavimuktikāmsyoh.

Mallinātha explains the second line as follows : " Damayantyā uccanāsike unnatanaśāpuṇe tvayi nālikānam *dronicāpasāra* vimuktim kāmayate iti tathoktayostayōśmilakam abhikāśacaribhyo na iti na pratyayaḥ. Nālike *dronicāpa* na kim iti kākāh pūrvavat uprakṣeḥ.

<sup>125</sup> See p. 14.

<sup>126</sup> See Das alte Indien, mit besonderer Rücksicht auf Aegypten. Von Dr. P. von Bohlen, II, p. 66; compare Mahābhārata, Vanaparva, Indra-lokabhiṇḍanaparva, I, 3, 4.

3. Evam sampajito jiṣṇuruvāsa bhavane pitub  
upasikpan mahāstrōpi sa samharati pāṇḍavāḥ.

4. Cakrasya hastat dayitam vajram astram ca dussaham  
śāmanīca mahānāda meghavarhiśalakpaṇāḥ.

<sup>127</sup> See Kāmāndakiya, V, 51.

Panastridystagosthiśu rājanam abhītaśarab  
bodhayesyuh pramādyantam upyāśmālālikādibhib.

All the MSS. I have consulted give *nālīka*, and so do also the prints in Telugu and Grantha characters. The Calcutta edition has *nādīśa* which as

was in vogue among the ancient Hindus, if we can trust the evidence of one of the oldest Sanskrit writings.

In the preface to a Code of Gentoo Laws, or Ordinances of the Pundits, occurs the following passage: "It will no doubt strike the reader with wonder to find a prohibition of firearms in records of such unfathomable antiquity; and he will probably from hence renew the suspicion which has long been deemed absurd, that Alexander the Great did absolutely meet with some weapons of that kind in India as a passage in Quintus Curtius seems to ascertain. Gunpowder has been known in China, as well as in Hindustan, far beyond all periods of investigation. The word firearms is literally Sanskrit Agnee-aster, a weapon of fire; they describe the first species of it to have been a kind of dart or arrow tipped with fire and discharged upon the enemy from a bamboo. Among several extraordinary properties of this weapon, one was, that after it had taken its flight, it divided into several separate darts or streams of flame, each of which took effect, and which, when once kindled, could not be extinguished; but this kind of agnee-aster is now lost. Cannon in the Sanskrit idiom is called Shet-Agnees, or the weapon that kills a hundred men at once, from (Sheta) a hundred, and (gheneh) to kill; and the Pooran Shasters, or Histories, ascribe the invention of these destructive engines to Beeshookerma, the artist who is related to have forged all the weapons for the war which was maintained in the Suitee Jogue between Dewta and Ossoor

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I explained on page 232 as *d* and *t* are often interchanged, *daleyoreabhedah*, is another form for *adlikā*, if not so it must be regarded as an altogether false reading. The word *adlikā* (given in Böhlings and Roth's Sanskrit Wörterbuch as *nadlikā*) occurs nowhere else, and the only reference to it in the just now mentioned Sanskrit dictionary is this passage from the Kāmandakiya, and there even the meaning of the word is not positively stated, but it is merely suggested that it may be a gong (wohl., eine metallene Platte, an der die Stunden angeschlagen werden).

(or the good and bad spirits) for the space of one hundred years."<sup>128</sup>

And again we read in page 53 of the same work : "The Magistrate shall not make war with any deceitful machine, or with poisoned weapons, or with cannon and guns, or any other kind of firearms; nor shall he slay in war a person born an eunuch, or any person who putting his hands together supplicates for quarter, nor any person who has no means of escape, nor any man who is sitting down, nor any person who says, 'I am become of your party,' nor any man who is asleep, nor any man who is naked, nor any person who is not employed in war, nor any person who is come to see the battle, nor any person who is fighting with another, nor any person whose weapons are broken, nor any person who is wounded, nor any person who is fearful of the fight, nor any person who runs away from the battle."

As these passages are so often quoted without their origin being stated, it may at once be remarked that the prescription about the use of arms and the treatment of persons is a free translation from the seventh book of the institutes of Manu, vv. 90-93.

The important question at issue is, does this passage in Manu refer to firearms or not? In our opinion it certainly alludes to them, but still others prefer to apply it strictly to darts blazing with fire. The original words in Manu are :

Na kūtair āyudhair hanyāt yadhyamāno rāne ripūn  
na karṇibhir nāpi digdhaire nāgnijvalatējasañ.

"No one should strike in a combat his enemy with concealed weapons, nor with barbed arrows, nor with poisoned arrows, nor with darts kindled by fire." Kullukabhaṭṭa, the latest

<sup>128</sup> See A Code of Gentoo Laws, or Ordinances of the Pundits, from a Persian translation, made from the original, written in the Shanscrit Language (by Nathaniel Brassey Halhed), London 1770, pp. LII, LIII, and 53.

commentator of Manu, favors by his explanation the opinion of those who take this passage in the sense "as darta blazing with fire."<sup>122</sup> But then the questions arise, whether Kullakabhatta, who lived about four hundred years ago, expresses the *whole* meaning of the sentence, or whether Manu, though mentioning only ignited arrows, does not rather allude to firearms in general? The translation found in Dr. Monier Williams' Sanskrit English Dictionary under *agnijalitatem-jana* 'having a point hardened in fire' is quite beyond the mark.

The meaning of arrow (*sara*, *bāpa*) is much wider than is generally supposed. It was, and became more so in time, the usual term for any missile, whether it had the shape of an arrow or not; in the same way as the word *Dhanus* signified in course of time every missile or weapon, so that the Dhanurveda, the knowledge of the bow comprised the knowledge of all other arms.

For instance, the shot out of a gun is called a *sara*, as we have seen when describing the *nālika*,<sup>123</sup> but it may be a ball and not an arrow. A rocket is generally styled a *bāpa* (compare the Hindi term *bān*, a rocket); and *bānapattra* in Tamil, or *bānapatra* in Telugu denotes a gunpowder or firework factory.

A comparison of the context of the *Manavadharmanasāstra* with those of the *Śukranīti* and the *Nitiprakāśika* makes it clear that Manu alludes to firearms. The *Śukranīti* runs in our extract as follows:—

277. A king, bearing in mind the six principles of policy and the designs of his enemy and his own, should always kill his enemy by fair and unfair fighting.

<sup>122</sup> See Kullakabhatta to Manu, VII, 90. *Koṭīnyayudhāni bahib  
kaṣṭhadimayani antarguptanisitasastrāpi*; *etāḥ samare yudhyamānab  
dṛatrūm na hanyat*; *nāpi karṇyakaraphalakairbāṇib*; *nāpi viṣaktib  
nāpyagnidiptaphalakib*.

<sup>123</sup> See note 26, *droṇedpatserīpi*, discharging the missile of the Droṇi-  
cāpa.

278. When the king gladdens his soldiers on the march with a quarter extra pay, protects his body in the battle with a shield and armour;

279. has induced his soldiers to drink up to a state of intoxication, the strengthener of bravery, the soldier kills his enemy with a gun, swords, and other weapons.

280. A charioteer should be assailed by a lance, a person on a carriage or elephant by an arrow, an elephant by an elephant, a horse by a horse.

281. A carriage is to be opposed by a carriage, and a foot soldier also by a foot soldier, one person by another person, a weapon by a weapon, or a missile by a missile.

282. He should not kill a person who is slighted on the ground, nor one who is emasculated, nor one who has joined his hands as a suppliant, nor one who sits with dishevelled hair, nor one who says "I am thine."

Then follow beginning with 283 up to 284 the same exceptions as found in Manu, VII, 91—93, and specified in Halhed's Code.

The Śukranīti goes then on stating expressly:

286. These restrictions exist in fair but not in unfair fighting; to ensure the destruction of a powerful enemy there is no fighting equal to unfair fighting.

287. Unfair fighting was certainly observed by Rāma, Kṛṣṇa, Indra, and other gods; Bali, Yavana, and Namuci were killed by unfair fighting.

We see thus that the Śukranīti is in direct opposition to the law code bearing Manu's name, and considering the estimation in which the latter was held, it can hardly be assumed that a member of the Brahmanic community—in which term I include all the three higher castes and the Śudras within its pale—could have dared to compose it after the text of the *Manavadharmaśāstra* had once been finally settled as it stands to this day.

The Nitiprakasika coincides entirely with Manu, VII, 89, and in the first half of the 90th sloka, but differs in the second half of the 90th and the first half of the 91st sloka, and then agrees again, but this difference in two lines is of the greatest importance for our subject.<sup>121</sup>

*Manu, VII.*

89. Those rulers of the earth, who desirous of defeating each other, exert their utmost strength in battle without ever averting their faces, ascend after death directly to heaven.

90. No one should strike in a combat his enemy with concealed weapons, nor with barbed arrows, nor with poisoned arrows, nor with darts kindled by fire.

91. Nor should he kill a person who is alighted on the ground, nor one who is emasculated, nor one who has joined his hands as a suppliant, nor one who sits with dishevelled hair, nor one who says "I am thine."

*Nitiprakasika, VII.*

44. The same.

45. No one should strike in a combat his enemy with concealed weapons, nor with poisoned arrows, nor with machines kindled by fire (guns), nor also with various stratagems.

46. Nor should he kill a person who has climbed on a tree, nor one who is emasculated, nor one who has joined his hands as a suppliant, nor one who sits with dishevelled hair, nor one who says "I am thine."

<sup>121</sup> See Manu, VII, 90, 91.

90. Na kṣṭairyudhairhanyat  
yudhyamāno rāgo ripuḥ, na karpibhir  
ndpi digdhair udgnyijalitatajanoś.

91. Na eva hanydt etahārdūḍham na  
klibam na kṛtañjalim, na mukta-  
keśam nāśnam na tavaśmiti vadīnam.

Nitiprakasika, VII, 45, 46.

45. Na kṣṭairyudhairhanyat  
yudhyamāno rāgo ripuḥ, digdhair-  
agnyujvalaisyantreśāntreśācasra  
pythagvidhaiḥ.

46. Na hanydt erkaśam śrūḍham na  
klibam na kṛtañjalim, na mukta-  
keśam nāśnam na tavaśmiti vadīnam,

The punishment of any one who contravenes these laws was that he should inherit all the sins of him whom he thus kills unlawfully, and his victim would become heir to all the virtues of his murderer.<sup>122</sup> If what is most probable the Śukranīti and Nitiprakāśikā are of about the same age as our recension of the Mānavadharmaśāstra, the question as to firearms being known at that period can only be answered in the affirmative.

It appears that before the codification of the law in law-books, the rules and precepts regulating certain subjects seem to have been generally known among the people and even assumed already the form of verse. Otherwise it can hardly be explained that the very same slokas are found in different authors, unless one is prepared to state that one must have copied them from another. But for such a supposition there exists no proof. It is rather more likely that they were common property and then embodied in the respective codes. There is not the slightest doubt that the interdict of the Mānavadharmaśāstra interfered a great deal with the popularity of firearms, and that though they continued to be used, they were less frequently or perhaps less openly employed. The Mahābhārata too contains many precepts by which mean, deceitful, and cruel behaviour is forbidden in war, but in reality those laws were often broken. The behaviour of the Kauravas against the Pāndavas, whom they tried to burn

<sup>122</sup> As the Nitiprakāśikā differs somehow from the Mānavadharmaśāstra and from the Śukranīti we give here the following verses.

VII. 47. Na prasuptam na praptam na nagnam na nirayudham  
na yudhyamānam pāyantam na parepa samāgatam.  
48. Āyudhavyasenam prāptam nārtam nātiparikṣitam  
na hisam na paravrittam na ca valmikam aśritam.  
49. Na mukho tūpinam hanyat na striyo vṛpadhāriṇam  
etādṛśā bhāṭairvāpi gṛttayan killibhiḥ bhavet.  
50. Hanyamānasya yat kīcīt duṣkṛtam pūrvasañjitam  
tat sataghyā svasukṛtam tebhyo dadyat tathavidhāb.

With *na vikṛtā tṛṇīśā hanyośt* (sl. 49) compare Mahābhārata, Rajadharma, XC VIII, 48a : *Tṛṇaparopamukhaścaiva tāvamīti ca yo vacet.*

and to destroy by every imaginable means, the murder of the sleeping young Pāṇḍavas perpetrated by the Brahman Aśvatthāma; these and many more similar acts prove that though the laws of humanity were acknowledged *in abstracto* they were not as in the present day followed *in concreto*.

Besides the interference of these moral rules with the extension of the use of such weapons, another and perhaps even more potent reason can be produced. Firearms were such powerful engines of war, that every one, who possessed them, kept their construction and handling as secret as possible. This is, in fact, the real reason, why so few books treat on this subject, and why such works are so jealously kept secret that it is most difficult to get hold of them.

The Mahābhārata and Rāmāyaṇa are full of the description of wonderful divine firearms, the Āgneyastra. It may be that a solid substratum of fact underlies these descriptions, but they are so adorned with wonders that they outrun all reality. Perhaps the reason of these exaggerations was to conceal the real element of truth underlying them.

Aurva, the son of the sage Urva, or, according to the Mahābhārata, a son of Cyavana, was scarcely born when he threatened to burn the world by the flame proceeding from him. This flame was then removed into the sea, where it is known as the submarine fire (baḍavāgni).<sup>132</sup> Aurva became later the guardian of the orphaned Sagara, whom he instructed in the Vedas and to whom he gave the fire weapon (āgneyastra), by means of which Sagara regained the kingdom which his father Bāhu had lost. Agniveśa, the son of Agni, received, according to the Mahābhārata, the Āgneyastra from Bharadvāja, and Agniveśa handed this weapon down to the son of Bharadvāja, Drona. This wonderful fire weapon plays an important part in the epic and dramatic literature, but it should not be overlooked that similar

<sup>132</sup> See Harivamśa, XIV.

wonderful weapons were ascribed also to other gods besides, e.g., to Brahma, to Vāyu, to Varuna, &c., &c.<sup>134</sup>

Considering that Śukra or Uśanas is a member of the Bhārgava family, it seems a striking coincidence that the agneyastra is through Aurva also connected with the same family.

It may look strange that while gunpowder and firearms appear to have been known in India since immemorial times, and though we know that fireworks and firearms were always in use—the Portuguese, the first Europeans who came to this country, were struck at their landing with the display of both<sup>135</sup>—so few actual traces of them should be found in this country. But while admitting to a certain extent the truth of this observation, we must also consider that only very few old buildings have been preserved in India from ancient times, that we have nothing which can vie in age with Grecian antiquities, omitting Egyptian and Assyrian antiquities altogether. Yet still we can prove the existence of firearms by carved images of them being preserved in some ancient stone temples.

1. In the Madura District lies not far north from Ramnād (*Rāmāndhūpura*) on the sea the ancient *Tirupallāni*. It is

<sup>134</sup> See *Harivamśa*, XIV, 33.

Agneyam astraṁ labdhvā ca Bhārgavāt Sagaro nṛpah  
jigkyā prthivim hatvā Talajāṅghān sahaihayan.

Compare *Mahābhārata*, *Ādi-parva*, CXXX, 39, 40.

39. Agnivēṣṭum mahabhaṭagam Bharadvājaḥ pratāpavān  
pratyapadayat agneyam astraṁ astravidam varab.

40. Agnēśu jatassa munisato Bharatasasitama.

Bharadvājam tad agneyam mahastram pratyapadayat.

See *Sakuntala*, III, 56, and *Uttara Rāma Caritra*, VI.

<sup>135</sup> Castanheda says in his description of Vasco da Gama's entrance into Calicut: "The procession again set out, preceded by many trumpets and mambuts sounding all the way; and one of the Nayres carried a caliver, which he fired off at intervals." See Elliot's History of India, VI, 467; compare Kerr's Collection of Voyages, Vol II, 364. According to Sir A. Phayre, the king of Pegu, when advancing in 1464 up the Irrawadi against the king Meng Khoung could neither land at nor attack Prome, as it was defended with cannon and muskets; see Journal, Asiatic Soc. Bengal, 1869, XXXVIII, p. 40.

celebrated throughout India, on account of its famous temple dedicated to Ādijagannātha, for pilgrims visit it from Benares and other places in the north. The erection of this shrine goes back to a far distant period. On the outside of an ancient stone mandapa are seen the figures of some soldiers carrying in their hands small firearms. The dress of these sepoys is also peculiar, as the belts round their waists are provided with little bells. The soldiers have slippers on their feet and a peculiar cap on their heads.

2. In *Kumbhaghōra* (Combaconum) is a temple devoted to Śārīgapāṇi, i.e., to Viṣṇu bearing in his hands his bow Śāringa. It is one of the most ancient, largest, and most celebrated shrines in the Tanjore District. The height of the pagoda amounts to about 180 feet, and the numbers of its stories to eleven. On the left side of the front gate of the fifth story from the top is a king sitting in a chariot drawn by horses surrounded by his troops. In front of the king stand two sepoys with small firearms in their hands which look like pistols. The lower part of the pagoda is of solid stone, the higher ones and also the story just described partly of brick and partly of stone, i.e., the principal figures are all made of stone, but they are every ten years covered with a layer of chalk and bricks. The Śārīgapāṇi pagoda is said to be about 500 years old. Its sanctity and beauty is praised by seven Ālvārs, so that as it has not been rebuilt since that time, it must have been in existence when the sages lived. Tirupati is glorified by nine and Śrīraṅgam by ten Ālvārs.

3. In *Kāñcīperam* (Conjeveram) is a famous mandapa, which, as it rests on a hundred columns, is called *Sataśambhamandapa*, or *Nūṭikalmandapa* in Tamil. It was erected by Lakṣmikumāratatācārya also called Koṭikanyādanatatācārya, as he was very rich and generous, and was said to have given a wedding present of 50 rupees to a crore (or ten millions) of girls. Being a Tātacārya he belonged to one of the highest

74 priestly families of the Vaisnava brahmans, as the Tātācāryas trace their descent to Nadhamuni. He was the author of a work on Vedānta philosophy, and had at his own cost erected gopurams at Kāñčipuram, Tirupati, Śrīraṅgam, and Tirumalirainṭolai. His eldest son was Tirumalatātācārya, who administered the Anagundi kingdom for a while after the death of Veākaṭapatiṛāya. When the Muhammedans occupied Kāñčipuram Tirumalatātācārya lost all his riches.

The mandapa is a square ; 12 columns face the eastern and western sides, 8 columns face the northern and southern ; besides these 96 columns 4 stand apart. On the 4th column of the north side, when coming from the west, is cut in solid stone, as the principal ornament of the column, a combat between soldiers. A trooper sits on horseback and a foot soldier aims with his firearm at his enemy. The mandapa was erected about 1624 (the year being *tallakṣṇīdyeśakhābde*).

4. In the precincts of the Tanjore temple are carved in stone on stone pillars opposite the " *Skarga ekadaśi*-gate sepoyes with small carbines in their hands.

5. In Pērūr, a few miles from Coimbatore, is a celebrated Śiva temple and near it is a fine shrine, known as the Sabhāmandapa. On the base of its broad stone pillars stands a soldier with a gun in his hands. The date of the erection cannot be ascertained with exactness, and even popular belief does not ascribe to this mandapa more than a few hundred years. As is usual with buildings in the south of the Dekkan Tirumala Nayak is occasionally named as its builder.

All these buildings, which, as we have seen, contain representations of firearms, are, according to our notions of antiquity, not very ancient, as, the Tirupallani temple excepted, none of them is over 500 years old, but in judging the age of the subjects exhibited in the carvings of Indian temples, we should never lose sight of the fact that new subjects are not introduced in the architectural designs of the principal figures

in any Indian ecclesiastical building. No architect, no one who erects a sacred pagoda at his own cost, will dare to represent in the chief carving of a conspicuous part of a building, as a big stone column is no doubt, a subject which is new and with which his countrymen were not familiar in times of yore, or which are not mentioned in the *Silpaśāstra*, or the works on arts. This is a custom which is well known to every learned Brahman, and which is observed even now. Occasionally one sees in temples and other buildings odd, nay, even very indecent groups ; but these quaint figures, which are by the bye never central ones, fulfil a special object, namely, to catch the evil eye, and so to protect the structure from any mischievous consequences. Whenever a new private house is built, such a figure will be displayed somewhere in a conspicuous place, and is generally removed after it had been in its place for some time and thus fulfilled its object. I have been assured on good authority that the *Maricipatala*, a very ancient work on architecture, contains a description of architectural designs relating to firearms, but though I have written for this work, I am afraid I shall get it too late to verify this statement.<sup>134</sup>

Under these circumstances I cannot agree with the statement contained in Fergusson's excellent "History of Indian and Eastern Architecture" (p. 370), that "the date of the porch at Peroor is ascertained within narrow limits by the figure of a sepoy loading a musket being carved on the base of one of its pillars, and his costume and the shape of his arm are exactly those we find in contemporary pictures of the wars of Aurungzebe, or the early Mahrattas, in the beginning of the 18th century." I do not deny that the *Sabhamandapa* may be comparatively new, but the figure of the sepoy with a musket in his hand can in no way settle the age of the building. As to the remarks concerning the costume of the soldier, there is

<sup>134</sup> See Lists of Sanskrit Manuscripts in Private Libraries of Southern India, No. 5,610, lately published by me.

nothing to prove that his dress belongs to any certain period, and considering that the Hindu, if conservative in any thing, is especially so in his food and his dress, there is much probability that the uniform of the sepoy has also not been altered much in subsequent times. Moreover it must not be overlooked that the dress, especially the head-dress or turban varies according to caste and locality.

This remark leads me to refute an assertion made with some authority by Mr. W. F. Sinclair in the *Indian Antiquary* of September 1878. It is in a critical notice on a few slokas extracted, not quite correctly though, from the *Sukraniti* by Mr. Ram Das Sen.<sup>137</sup> In verse 136 we read : "The breech at the vent carries stone and powder and has a machinery which produces fire when striking." Alluding to this sloka Mr. Sinclair says : "From the evidence above given, it seems to me that if they (those verses) are not such interpolations the whole work must be a forgery of, at best, the 17th century, a period which I am led to select by the mention of the flint." Does Mr. Sinclair want to insinuate by this, that the Hindus did not know flints, nor their peculiar properties ? It is hardly credible that a nation, which is so observant, should have overlooked objects of such common occurrence ; or, if it knew them, that it should not have applied them to some use. Is it not perhaps judging others too much according to our own proficiencies, to intimate that, if Europeans did not apply flints or flintlocks to guns before the 17th century, no body else could have done so ? There is scarcely anything so common, so well known in this country, as the qualities of the flint ; in fact the Hindus are adepts in any thing connected with the art of making fire.

In the sixth book of the *Nitiprakasika* are enumerated all the articles which a king should take with him when setting out for a military expedition. After mentioning all sorts of provisions and arms mention is also made in the 51st sloka

<sup>137</sup> *Indian Antiquary*, 1878, p. 136.

of the following things: " and also the cotton of the silk-cotton tree and iron joined with flint."<sup>128</sup> This suggests at once the ordinary Indian tinderbox commonly called Ramaśvāmi, from the figure of the idol on its top.

The word for "flint" is in Tamil *sakkimukki* or *sakimuki*, and in Telugu *cakimuki*. If these terms are not onomatopoeic, imitating the sound when the flint is struck, they may be regarded as derivations (*tadbhavams*) from the Sanskrit *sikkhanukha*, flame-mouth.

I trust thus to have proved that gunpowder and firearms were known in India in the most ancient times, that the statement in the Śukranīti about powder is supported by the Nītiprakāśika of Vaiśampayana, and that the quotation from the Rājalaṅgminārāyaṇahṛdaya, a part of the ancient Atharva-narahasya, is an additional proof of it. I contend further that the knowledge of making gunpowder was never forgotten in India; but, that it was not earlier known in Europe is partly due to the isolated position of India, and partly also to the want of saltpetre in Europe, which prevented European nations from discovering the oxydizing properties of saltpetre. Moreover it must not be forgotten, that the preparation of gunpowder, even after it had become known, was kept everywhere a deep secret. The ancient Hindus enjoyed a well-deserved reputation as skilful artificers in iron and steel, the manipulation of which metals requires a considerable amount of ability, and these circumstances go surely far enough to justify the conclusion that the ancient Hindus were as well able to prepare firearms as the modern Hindus are now-a-days.<sup>129</sup> I further believe to have proved through quotations from the Nītiprakāśika, the Naisadha, and even by incidental evidence from Manu that firearms were well known in ancient times, though the

<sup>128</sup> See Nītiprakāśika, VI, 61; Śalmalīśilikam caiva vṣpyāśmāraśāmash-yutam.—The Aśwya hillmen, e.g., dig and smelt the iron-ore and cast it into musket-barrels.

interdict placed on them by Manu may have interfered somehow with their being generally used. On the other hand it must not be forgotten, that, though firearms existed, their construction was still in its infancy and that their application was very limited and did not diminish much the use of other arms. It ought also not to be overlooked that, as now, so also in ancient times, every thing connected with firearms and their improvement was surrounded with great mystery and the few books written on this subject were guarded like treasures and not communicated to the common crowd. The danger in handling firearms may also have deterred people from availing themselves of them so much as they otherwise would have done. Nevertheless the existence of guns and cannons in India in the earliest times seems to me to be satisfactorily proved from evidence supplied by some of the oldest Indian writings.

## CHAPTER V.

### ON THE ARMY ORGANISATION AND POLITICAL MAXIMS OF THE ANCIENT HINDUS.

#### THE SEVENTH SECTION OF THE FOURTH BOOK OF THE SUKRANITI.

1. Senā sastrāstrasanyuktamanusyādigapātmika.
2. Svagamānyagamā ceti dvividha, saiva pr̄thak tridha, daivyasuri mānavī ca, pūrvapūrvabaladhikā;

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1. An army is a numerous body consisting especially of men Army, provided with weapons and missiles.
2. It is of two kinds either self-moving or not self-moving; it is besides in a threefold manner an army either of gods, of demons or of human beings, each preceding being stronger than the succeeding.

3. Svagamā yā svayangantri, yanagānyagama smṛta ;  
padatām svagamam, cāyadrathāsvagajagam tridhā. 5

4. Sainyat vīna maiva rājyam, na dhanam, na parakramam.

5. Balino vaśagah sarve durbalasya ca śatrvah  
bhavantyalpajanasvayāpi, nrpasya tu na kim punah.

6. Śariram hi balam, śauryabalam, sainyabalam tatha  
caturtham astrikabalam, pañcamam dhibalam smṛtam,  
ṣaṭam ayurbalam, tvetairupeto Viṣṇureva sah. 10

7. Na balena vinātyalpam ripum jetum kṣamah sada  
devāsuranarāstvanyopāyairnityam bhavanti hi.

8. Balam eva ripornityam parājayakaram param  
tasmat balam abhedyam tu dharayet yatnato nrpaḥ. 15

9. Senābalam tu dvividham, svīyam maitram ca tad dvidhā,  
maulasadyaskabhedābhyaṁ, sārasāram punardvidha.

3. It is called self-moving, if it moves itself; not self-moving  
if it moves on vehicles. Infantry is self-moving; the  
not self-moving army moves in three ways, on  
carriages, horses and elephants.

4. If there is no army, there is no government, no wealth,  
no power.

5. All become the subjects even of a man of humble birth if  
he is strong, all his enemies if he is weak; is this not  
more so in the case of a king?

6. There surely exists physical strength, bravery, likewise  
military strength, the fourth is the strength of weapons,  
the fifth is called intellectual power, the sixth is vital  
power; who is endowed with these is indeed another  
Viṣṇu.

7. By force alone are gods, demons and men ever able to  
conquer even a very weak enemy.

8. An army is truly always the best means for the defeat of  
an enemy, a king should therefore zealously maintain  
an inconquerable army.

9. An armed force is of two kinds, it is either one's own, or  
it belongs to an ally; each with its own classes of

10. Aśikṣitam siksitam ca, gulmibhūtam agulniakam,  
dattastrādi svāśastrāstram, svyāhi dattavāhanam. 20

11. Saujanyat sadhakam maitram, svīyam bhṛtya prapālitam,  
maulam bahvabdnubandhi, sādyaskam yattadanyathā.

12. Suyuddhakāmukam śāram, aśrāmā vīparitakam,  
siksitam vyahakuśalam, vīparitam aśikṣitam.

13. Gulmibhūtam sadhikāri, svāsvāmikam agulniakam,  
dattastrādi svāminā yat, svāśastrāstram ato'nyathā. 25

14. Kṛtagulmam svayaṅgulmam, tadvacca dattavāhanam  
āranyakam Kirātādi yat svādhinam svatejast.

15. Utsr̄stam ripuna vāpi bhṛtyavarga niveśitam  
bhedādhiuam kṛtam śatruḥ sninyani śatrubalam smṛtam,  
ubhayam durbalam proktam, kevalam sadhakam na tat. 30

reserve and line, and those again are in a twofold manner divided into efficient and inefficient men.

10. It is either trained or not trained, formed or not formed into corps, provided or providing itself with arms, provided or providing itself with vehicles.

11. An allied army is useful when kindly treated, one's own is maintained by pay; the reserve is of many years' standing, the line differs in this respect.

12. The efficient is eager for a good fight, the inefficient is the reverse; the trained is clever in tactics, the untrained is the reverse.

13. The army formed in corps has a commander, that which is its own master is not well arranged in corps; the one has received arms from the king, the other which carries its own arms differs in this respect.

14. The forester corps, i.e., the Kirātas and similar tribes, which is subdued by the power of the king, is formed into corps or has formed itself into corps, after having been supplied with vehicles.

15. The army of the enemy which was given up by the foe, or which having entered his service is won over by dissension, is still regarded as hostile; both are regarded as weak, and especially as not trustworthy.

16. Samairnyuddhakusalairvyayamairnatibhistathā  
vardhayet bahuṇḍdartham bhojjaiḥ śarirakam balam.  
17. Mṛgayabhisu vyāghrānām āastrāstrābhyaśataḥ sada  
vardhayet śurasamyogat̄ samyak śauryabalam nṛpah.  
18. Senābalam subhṛtya tu tapobhyasāsistathāstrikan  
vardhayet āstracaturasamyogat̄ dhībalam sada.  
19. Satkriyābhiścīraṁsthāyi nityam rājyam bhavet yathā,  
svagotre tu tathā kuryāt tat̄ āyurbalam neyate;  
yāvat̄ gotre rājyam asti tāvat̄ eva sa jīvati.  
20. Caturguṇam hi padatam aśvato dharayet sada,  
pañcamāṁśānstu vṛṣabhan̄ aṣṭāṁśāñśca kramelakan;  
21. Caturthāṁśān gajān uṣṭrat̄, gajardhañśca rathānsthatha  
rathāt̄ tu dvigunam rāja bṛhannālikam eva ca.

16. One should increase the physical strength for pugilistic combats by diet and by athletic exercises and wrestling with equals and with those who are experts in close fighting.  
17. A king should always well encourage bravery by tiger-hunts, by practice with weapons and arms and through association with brave men.  
18. He should keep up his military strength by good pay, but the strength of his weapons by penance and practice; and his intellectual power by having always intercourse with wise persons.  
19. That his kingdom may always be long lasting in his family, he should effect by good deeds, this is called vital power; as long as the kingdom remains in his family, he lives indeed.  
20. A king should always maintain four times as many foot-  
soldiers as horses, for every five horses one bull, for  
every eight horses one camel;  
21. for every four camels one elephant, for every two elephants  
one chariot, for every chariot two big guns.<sup>128</sup>

<sup>128</sup> See pp. 4-6. The proportion of the different parts to each other is represented by 5 chariots, 10 elephants, 40 camels, 64 bulls, 320 horses, and 1,280 men.

Proportion  
of different  
arms to  
each other.

22. Padatibahulam sainyam madhyāsvam tu gajalpakam  
tathā vṛṣostraśāmānyam rakṣet nāgadhiṇam na hi. 45

23. Savayassāraveśauca śastrāstram tu pṛthak śatam  
laghunālikayuktānām padatīnām śatatravayam;

24. Aśtyāsvān ratham caikam bṛhannaladvayam tathā,  
uṣṭrān daśā gajau dvau tu śakaṭau soḍaśārṣabhaṇ;

25. Tathā lekhakaṣṭakam hi mantritritayam eva ca,  
dharayet nr̄patih saṁhyak vatsare lakṣakarṣabhaṇ.<sup>140</sup> 50

22. He should keep an army with many foot-soldiers, with a moderate number of horses, but with few elephants; likewise with a small number of bulls and camels, but not with many elephants.

23. A prince, who gets a lac of karṣas a year, should maintain well with weapons and missiles respectively one hundred men, 300 foot-soldiers with small firearms, who are (all) equal in age, strength and dress;

24. eighty horses and one chariot; likewise two big guns; ten camels, two elephants, two waggons and sixteen bulls;

25. likewise also six clerks and certainly three ministers.

<sup>140</sup> See *Lilavati*, cl. 2-4.

2. Varṣaṇakanam dātakadvayam yत श कक्षी ताता पपाचताराह ते योजना द्रम्मा इवागम्यो द्रम्मास्तथा योजाश्विता निकाप.

3. Tulya yavabhyam kāthitatre guñjā vallāstriṅguñjo dharāpam ca toṣṭan  
gadyāpakastaddvayam īndratulyairvallaistathaike dhātakāḥ pra-  
diṣṭāḥ.

4. Daśardhaguñjam pravadanti maṣṭam maṣṭahvayaśśoḍaśabhiśca karṣa-  
karṣaścaturbhīśca palam tula tacchataṁ suvarpaṣya suvarpaṣa-  
jām.

That is 20 *Vardjakas* are 1 *Kakṣī*, 4 *Kakṣīplas* 1 *Pāpa*, 16 *Pāpas* 1 *Dramma*,  
16 *Drammas* 1 *Nīga*. 2 *Fava*s are 1 *Guñja*, 3 *Guñjas* 1 *Valla*,  
8 *Vallas* 1 *Dharāpa*, 2 *Dharopas* 1 *Gadyāpaka* and 16 *Vallas*  
1 *Dhātaka*. Further 10½ *Guñjas* are 1 *Mṛgas*, 16 *Mṛgas* 1 *Karpa*,  
4 *Karpas* 1 *Pala*, 100 *Palas* 1 *Tula* and a *Tula* is equal to a *Susarga*.

26. Sambharadānabhogaṛtham dhanam sārdhasahasrakam,  
lekhakarthe śatam māsi mantryarthe tu śatatravam ;  
 27. Triśatam dāraputrarthe vidvadarthe śatadvayam  
śādyāśvapadagārtham hi rāja catussahasrakam ; 55  
 28. Gajosīraवर्षानालर्थम् vyayikuryāt catuśsatam  
sesam kośe dhanam sthāpyam rajñā sārdhasahasrakam.  
 29. Prativarṣam svavesārtham sainikebhyo dhanam haret.

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26. The king should spend on provisions, largesse and pleasure Expend.  
fifteen hundred karṣas, on clerks one hundred a month, iture.  
but on ministers three hundred ;  
 27. on his wife and son three hundred, on learned men two  
hundred, on elephant-drivers, horses (cavalry) and  
foot-soldiers four thousand ;  
 28. on the straw for elephants, camels and bulls four hundred.  
The remaining money fifteen hundred karṣas should  
be deposited by the king in the treasury.<sup>141</sup>  
 29. The king should deduct every year a sum of money from  
the soldiers for their dress.

<sup>141</sup> The 100,000 Karṣas will be expended as follows :—

					Per Monsem.
Provisions, largesse and pleasure	..	..	..	..	1,500 Karṣas.
Clerks (one clerk at 16½ K.)	..	..	..	..	100 "
Ministers (one minister at 100 K.)	..	..	..	..	300 "
Wife and family	..	..	..	..	300 "
Learned men	..	..	..	..	200 "
Elephant drivers, cavalry and infantry	..	..	..	..	4,000 "
Straw	..	..	..	..	400 "
Reserve funds	..	..	..	..	1,500 "
				Total ..	8,300 "

or 99,600 Karṣas, i.e., about a lac of Karṣas a year.

The title of a sovereign depends on the yearly income his country yields to him. A Śāraṇī is called a prince who receives up to 3 lacs, a Māndalīka gets up to 10 lacs, a Rājā up to 20 lacs, a Mahārājā up to 50 lacs, a Svarāj up to a crore or ten millions, a Sāvarāj up to 10 crores, and a Vīra up to 25 crores. To a Sārvabhauma is subjected the whole earth with its seven islands.

30. Lohasāramayaḥ cakrasugamo, mañcaśāsanāḥ,  
svāndolayitarūdhastu, madhyamāśānasārathīḥ, 60  
 31. Śastrāstrasandharyudara, iṣṭacchayo, manoramaḥ,  
evānvidhō ratho rājña rakṣyo nityam sadaśvakaḥ.  
 32. Nilatālurnilajihō vakradanto hyadantakah  
dirghadveśi krūramadāḥ tathā pr̄sthavidhūnakah.  
 33. Daśāṣṭonanakho mando bhūviśodhanapuochakah  
evānvidhō' niṣṭagajo, viparītaḥ śubhāvahāḥ. 65  
 34. Bhadro, mandro, nṛgo, miśro gajo jatyā caturvidhah.

30. An iron-made carriage, well going on wheels, provided with a carriage couch as a seat; on which is fixed a swing, with a charioteer on the middle seat;  
 31. with an interior carrying weapons and missiles, giving agreeable shade, and (altogether) beautiful—such a carriage provided with good horses, should always be kept by the king.  
 32. An elephant with a dark blue palate, a dark blue tongue, Elephant a crooked tooth, toothless, which bears malice a long time, has fierce rut, waddles likewise with his hinder part;  
 33. with ten or seven claws, is slow, which rubs the ground with his tail—such an elephant is undesirable, the opposite confers benefits.  
 34. The elephant is of four kinds according to its race; either a Bhadra (*propitious*), Mandra (*pleasing*), Mṛga (*deer*), or a Miśra (*mixed*).

*See* Śukrāntī, I, 184-187.

184. Siṁhāḥ su nṛpāḥ prakto yāvat lakṣaṇyavadhi  
tadūrdhvam daśalakṣanta nṛpo māṇḍalikāḥ smṛtaḥ.  
 185. Tadūrdhvam tu bhavet rāja yāvat viṁśatilakṣakāḥ  
pañcasatūt lakṣaparyanto mahārājaḥ prakūrtitāḥ  
 186. Tatāstu koṭiparyantāḥ evarāt, eṣārāt tataḥ param  
daśakeśimīto yāvat, virāt tu tadānantaram  
 187. Pañcasatūt koṭiparyantāḥ, skṛvabhaumastataḥ param  
saptadeśī pañcātī yasya vāsyā bhavet sada.

35. Madhvābhādantah sabalaḥ samāṅgo vartulakṣṭih  
sumukho' vayavaśreṣṭho jñayo bhadra gajah sadā.

36. Sthūlakuṣī siṁhadrī ca bṛhattvāggalasundakāḥ  
madyanāvayavo dhīrghakāyo mandragajassmṛtaḥ. 70

37. Tanukanthādantakarpaṇudakāḥ sthūlākṣa eva hi  
suhrasvādharamedhīrastu vāmano nṛgasañjīvakāḥ.

38. Eṣam lakṣmairvimilito gajo miśra iti smṛtaḥ ;  
bhinnam bhinnam pramāṇam tu trayāṇam api kirtitam. 75

39. Gajamāne hyaṅgulam syāt aṣṭabhīṣṭu yavodaraiḥ  
caturviṁśatyaṅgulaistaiḥ karāḥ proktō manṭibhiḥ;

40. Saptahastonnatirbhadre hyaṣṭahnastapradinghata  
parināho daśakarāḥ udarasya bhavet sadā.

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35. The elephant which has honey-coloured teeth, is strong, well proportioned, has a globular shape, good head and excellent limbs, is always known as a Bhadra.

36. The elephant which has a huge belly, and a lion's eye, a thick skin, throat and trunk, middle-sized limbs, a long body, is styled Mandra.

37. The elephant which has a small neck, teeth, ears and trunk, a peculiarly big eye, but a very small underlip and membrum, and is dwarfish, is called Mṛga.

38. The elephant which is mixed with the marks of these three, is called Miśra. It is also mentioned, that these three elephants differ respectively in size.

39. An aṅgula (the breadth of a thumb), when applied for the measurement of an elephant, should consist exactly of eight coras, 24 such aṅgulas are declared by wise men to be an elephantine hand.

40. The height of a Bhadra is 7 cubits, its length 8 cubits, the circumference of its belly should always be 10 cubits.

41. Pramāṇam mandramṛgayorhastahinam kramat̄ atah  
kathitam daighyasāmyam tu munibhirbhadrāman-  
drayoh.

42. Br̄hadbhr̄ūgandaphalastu dhṛtaśīṣagatih sada  
gajah śreṣṭhastu sarvesam ābhhalakṣaṇasarmyutah.

43. Pañcavāṅgulenaiva vājimānam pr̄thak smṛtam,  
catvārinśāṅgulamukho vāji yaścottamottamah.

44. Sañtrimśadaṅgulamukho hyettamah parikirtitah  
dvatrimśadaṅgulamukho madhyamah sa udāhṛtab.

45. Aṣṭāvinśatyaṅgulo yo mukhe nīcaḥ prakirtitah ;  
vājinām mukhamānena sarvāvayavakalpanā.

46. Auccam tu mukhamānena trigunam parikirtitam.

80

85

90

41. The size of a Mandra and Mṛga is respectively one cubit less; though the length of a Mandra and Mṛga is by sages declared to be the same.

42. The best of all elephants is surely that, which has large brows, cheek and forehead, bears always its head firmly, and is endowed with auspicious marks.

43. By an aṅgula of only five barley grains is the equine Horse measure separately recorded. A horse whose head is 40 aṅgulas (long) is regarded as the very best.

44. A horse whose head is 36 aṅgulas long is surely considered a very fair one; a horse whose head is 32 aṅgulas long is declared to be a middling one.

45. A horse whose head is 28 aṅgulas long is regarded as an inferior one. The proportion of all the limbs of a horse is measured by the length of the head.

46. The height is declared to be three times the length of the head.

47. Širomanīm samārabhya puechamālāntam eva hi  
tritīyāṁśadhikaṁ dairghyam mukhamānāt catuṛguṇam  
parīkṣāhastūdarasya trigunastryaṅgulādhikaḥ.

48. Šmaśruhinamukhaḥ kāntapragalbhöttunganāsikāḥ  
dirghoddhutagrīvamukho hrasvakukūkhuraśrutiḥ ; 95

49. Turapracandavegaśca haisameghasamasvanāḥ  
nātikrūro nātimāndurdevasatvo manoramāḥ ;  
sukāntigandhavarṇāśca sadguṇabhramarānvitāḥ.

50. Bhramarastu dvividhāvarto vāmadakṣiṇabhedaṭah  
pūrṇo'pūrṇah punardvedhā dirgho hrasvastathaiva ca. 100

51. Štripundehe vāmadakṣau yathoktaphaladau kremāt  
na tathā viparītau tu subhāsubhaphalapradāu.

47. The length beginning with the poll up to the very root of the tail is  $1\frac{1}{2}$  of the height, or four times the length of the head, the circumference of the belly is three times the length of the head and three angulas besides.

48. A horse which has a face without whiskers, is beautiful, courageous, has a high nose, a long and raised crest and head, a short belly, hoof and ear ;

49. is impetuous and fast, neighs like a cloud or a goose (*hamsa*), is neither too fierce nor too mild, is a pleasing *Dvasesas* (godlike); it is of excellent beauty, flavour, and colour, and endowed with feathers of good qualities.

50. A feather is turned in two ways, either to the right or left, Feathers of the  
is full or not full, and is further in a two-fold manner horse.  
either long or short.

51. The left-and right-side feathers of mares and stallions are respectively, as said, suspicious, but not thus, if they are on opposite sides; for they have then neither good nor bad consequences.

52. Nicordhvatiyāñmukhataḥ phalabhedo bhavet tayoh  
śāṅkhacakraगadapadmavedisvastikasannibhaḥ ;  
53. Prasādatoranadhanusupūrṇakalaśaktih  
svastikasrañminakhadgaśrivatsabhaḥ śubho bhramah. 105

54. Nāsikāgre lalaṭe ca saikhe kantheaca mastako  
āvarto jāyate yośam te dhanyāsturagottamāḥ.  
55. Hṛdi skandhe gale caiva kaṭideśe tathaivā ca  
nābhau kūkṣau ca pārvāgre madhyamāḥ samprakīrtitāḥ. 110

56. Lalaṭe yasya cāvartadvitayasya samudbhavaḥ  
mastako ca trītyasya pūrnaharṣo'yaṁ uttamāḥ.  
57. Pr̥śthavarnāśe yadāvarto yasyaikaḥ samprajāyate  
sakrotyaśvasaṅghatān svāmināḥ sūryaśñijñakāḥ.  
58. Trayo yasya lalaṭasthaḥ āvartastiryaguttarāḥ  
trikūṭāḥ sa parijñeyo vajī vṛddhikarāḥ sada. 115

52. There will be a difference in efficiency according as its mouth is low, high or oblique. If the feather is like a shell, wheel, club, lotus, altar, portico ;  
53. like an upper story, arch, bow, well-filled pitcher, like a triangle, chaplet, fish, sword, a mole on the breast, it is a lucky feather.  
54. The horses on whose tip of the nose, forehead, temple, throat or skull exists a feather, are the best.  
55. Those horses are regarded as middling, which have it on the heart, shoulder, neck, likewise on the hips, on the navel, belly and foreribs.  
56. That horse is the best *Pūrnaharṣa* (fulljoy) on whose temple rises a double feather, and on whose skull rises a third.  
57. That horse on whose backbone rises one feather, is called *Sūrya* (sun) and procures to his master masses of horses.  
58. That horse on whose forehead stand three oblique feathers, is called *Trīkūṭa* (threesepeaked) and it gives always prosperity to its master.

59. Evam eva prakāreṇa trayo grīvam samāśritah  
samāvartah sa vajīṣo jāyate nṛpamandire.  
60. Kapolasthau yadāvartau drāyete yasya vājinah  
yaśovṛddhikarau proktau rājyavṛddhikarau matau. 120

61. Eko vātha kapolastho yaayāvartah pradrāyate  
sarvanāmā sa vikhyatāḥ sa icchet svāmināśanam.  
62. Gaṇḍasamsthō yadāvarto vajino daksināśritah  
sa karoti mahāsaukhyam svāminam śivasañjñikah.  
63. Sahridvāmaśritah krūrāḥ prakaroti dhanakṣayam  
indrakṣau tāvubhau ēastau nṛparūpyavivṛddhidau. 125

64. Karmamūle yadāvartau stanamadhye tathā parau  
vijayākhyau ubhau tau tu yuddhakāle yaśahpradau.  
65. Skandhapārēve yadāvartau sa bhavet padmalakṣaṇah  
karoti vividhān padmān svāminah santatam sukhām. 130

59. That is the best horse in the King's palace, on whose neck  
are also placed three feathers in such a manner.  
60. The two feathers which on a horse's cheeks are seen stand-  
ing, are called augmentors of fame and are esteemed  
as augmentors of kingship.  
61. A horse, on whose left cheek is observed a feather standing,  
is called *Sareasāmā*, and it may wish for the destruc-  
tion of its master.  
62. The horse on whose right cheek stands a feather renders  
his master very happy, it is called *Sīcā* (prosperous).  
63. That bad (feather) on the left side of the heart produces  
loss of wealth, the two excellent *Indrakṣas* (Indra's eyes)  
increase the kingdom of the king.  
64. A horse which has two feathers on the root of the ear, or  
which has also two on the middle of the breast; these  
both are called *Vijaya* (victory) and give glory in time  
of war.  
65. A horse, which has two feathers on the shoulderblades,  
should be called *Padma* (wealth), it gives many virtues  
and continual happiness to its master.

66. Nāśāmadhye yadāvarta eko vā yadi vā trayam  
takravartī sa vijñeyo vajī bhūpalasafjñikah.  
67. Kapthe yasya mahāvarta ekaḥ śreṣṭhabh prajāyate  
cintāmaṇibh sa vijñeyah cintitārthaśukhapradah.  
68. Śuklākhyau phālakapīhasthau avartau vriddikirtidau. 135  
69. Yasyāvartau vakragatau kuksyante vājino yadi,  
sa nūnam mṛtyum āpnoti kuryāt vā svāmināśanam.  
70. Jānusarhstha yadāvartāḥ pravāsaklesakārakah,  
vajimedhre yadāvarto vijayaśrīvināśanah.  
71. Trikasarhsthā yadāvartāḥ trivargasya prapāśanah 140  
puochamūle yadāvarto dhūmaketuranarthakrt,  
guhyapuochatrikāvartī sa kṛtantabhbhayapradah.

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66. According as there is one feather or there are three feathers on the midst of the nose, the horse is called *Cakravartī* or *Bhūpāla*.  
67. The horse on whose throat is one very good large feather, is called *Cintāmaṇī*, bestowing every imaginary happiness and wealth.  
68. Two feathers, which stand on the forehead and throat (and are) called *Śukla* (bright), give fame and prosperity.  
69. If at the extremity of the belly of a horse are two curved feathers, that will surely incur death or cause the destruction of its master.  
70. If there are feathers on the knees, they cause troubles and sojournings; if a feather is on the penis of a horse, it ruins victory and prosperity.  
71. If a feather stands on the lower spine it is the destroyer of three things,<sup>142</sup> if the feather *Dhūmaketu* (comet) is on the root of the tail, it produces trouble; a horse which has a feather on the anus, tail and lower spine causes fear of death.

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<sup>142</sup> Dharma, artha, kama.

72. Madhyadanda parévagamā saiva satapadi kace  
śtidustāngusḥhamitā dīrghāduṣṭā yathā yathā.

73. Aśrupatahanugandahṛdgalaprōthavastiṣu  
kaṭisāñkhajānumuśkakakunnābhigudeṣu ca ;  
dakṣakukṣau dakṣapade tvaśubho bhramarab sada. 145

74. Galamadhye prsthāmadhye uttarosthe' dhare tathā,  
karpānestrāntare vīmakukṣau eiva tu pāśvayoh;  
gruṣu ca subhāvarto vajinām sgrspādayoh. 150

75. Āvartau sāntaraū phālo sūryacandrau subhapradau  
militau tau madhyaphalau hyatilagnau tu dusphalau.

76. Āvartatritayam phale śubham cordhvam tu sāntaram  
asubham cātisārlagnam āvartadvitayam tathā.

72. If the feather is in the midst formed like a stick, is turned towards the sides, is on the head, it is a *Satapsaṭī*; it is very bad if it is a thumb broad, in proportion as it is long it is good.

73. If a feather is on the place where the tears fall, on the cheek, jaw, heart, neck and abdomen, on the buttock, temple, knee, penis, hump, navel and anus, if on the right belly, on the right foot, that is always an unlucky feather.

74. A good horse-feather is on the middle of the neck, on the middle of the back, on the upperlip, likewise on the underlip, between eye and ear, on the left belly, on the two sides, on the loins and on the frontlegs.

75. Two feathers apart on the forehead, *Sūryacandras* (sun and moon) give luck, if not apart they are pretty good, but surely unlucky, if much mixed.

76. Three perpendicular and apart standing feathers on the forehead are lucky, but two (similar) much mixed feathers are unlucky.

77. Trikoṇatritayam phale āvartānām tu duḥkhadam  
galamadhye subhaḥ tvekaḥ sarvāśubhanivāraṇaḥ. 155

78. Adhomukhaḥ subhaḥ pāde phale cordhvamukho bhra-  
maḥ  
nacivātyaśubhā prsthāmukhī śatapadi mata.

79. Mēdrasya paścāt bhramari stani vājī sa cāśubhah,  
bhramah karṇasamipe tu ṣrṅgi caikah sa ninditah. 160

80. Grīvōrdhvapārśve bhramari hyekaraśmīh sa caikataḥ  
pādordhvamukhabhramari kilōtpatiḥ sa ninditaḥ.

81. Śubhaśubhau bhramau yasmin sa vājī madhyamah  
smṛtah  
mukhe patsu sitah pañcakalyānośvah sada mataḥ.

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77. Three triangular feathers on the forehead are unlucky ;  
but one lucky feather on the middle of the neck, sus-  
pends all bad ones.

78. A feather on the foot with its face downwards, and one on  
the forehead with its face upwards, is lucky, but the  
*Śatapadi* is not regarded as very lucky, if it is turned  
towards the back.

79. If the feather is a *Stani* (having a nipple) behind the  
penis, the horse is also unlucky, but if the feather is  
a *Ṣrṅgi* (horned) near the ear, it is blamed.

80. The feather *Ekarāsmī* (having one string) on one side on the  
upper part of the neck, (and) the feather *KUlotpatiḥ*  
(destroying bolts) on the foot with its face upwards is  
despised.

81. The horse in which are lucky and unlucky feathers is  
a *Madhyamī* (middling), that which is white on the head  
and foot is always esteemed as a *Pañcakalyāna* (excellent  
for five things).

82. Sa eva hr̥daye skandhe pucche śveto'śṭamāṅgalaḥ, 165  
       karne syāmāḥ syāmakarnāḥ sarvataḥ tvekavarṇabhaṭ.  
 83. Tatrāpi sarvataḥ śveto medhiyah pūjyāḥ sadaiva hi,  
       vaidūryasannibhe netre yasya sto jayamaṅgalaḥ.  
 84. Miśravarṇaḥ tvekavarṇaḥ pūjyāḥ syāt sundaro yadi.  
 85. Kṛṣṇapādo hayo nindyaḥ tathā śvetaikapadapi 170  
       rākṣo dhuśaravarnaśca gardhabhabbo'pi ninditaḥ.  
 86. Kṛṣṇatāluḥ kṛṣṇajilivah kṛṣṇoṣṭhaśca vininditaḥ  
       sarvataḥ kṛṣṇavarno yaḥ pucche śvetāḥ sa ninditaḥ.  
 87. Suśvetaphalatilako viddho varṇāntarena ca 175  
       sa vājī dalabhañjī tu yasya so'pyatininditaḥ.

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82. The horse which is white on the heart, shoulder and tail is an *Aṣṭamāṅgala* (excellent for eight things), that, which has a black ear and only one other color (besides) is a *Syāmakarna* (black ear).  
 83. That which except there (the black ear) is totally white, is always to be worshipped as a *Medhya* (sacrificial), that whose eyes are like a turquoise is a *Jayamāṅgala* (excellent for victory).  
 84. Whether a horse has different colours or has one colour it should always be esteemed, if it is beautiful.  
 85. A horse with a black foot is despisable, likewise if it has only one white foot, one which is rough and is grey-coloured is always blamed as looking like a donkey.  
 86. A horse with a black palate, black tongue and black lip is despised; a horse which is everywhere black but is white at the tail is blamed.  
 87. That horse which has on its forehead a very white mark, which is perforated by another colour is a *Dalabhañjī* (Piece breaking) and its owner is also much blamed.

88. Samhanyat varṇajān dosān snigdhavarṇo bhavet yadi ;  
baladhikaṭaḥ sugatīrmaṭaḥ sarvāṅgasundaraḥ,  
natikrūraḥ sadā pūjyo bhramādyairapi dūṣitah.

89. Parināho vṛṣamukhāt udare tu catuṛguṇāt  
sa kakut triguṇoccam tu sārdhatriguṇadirghata. 180

90. Saptatālo vṛṣabḥ pūjyo guṇairetairyuto yadi  
na sthāyi na ca vai mandah suvoḍha hyaṅgasundaraḥ,  
natikrūraḥ supṛṣṭhah ca vṛṣabhaḥ śreṣṭha ucyate.

91. Trīṁśadyojanagantā vā pratyaham bhāravāhakāḥ  
daśatalaśca<sup>163</sup> sudṛḍhah sumukhoṣṭrah praśasyate. 185

92. Śatam āyurmanusyāṇām gajāṇām paramām smṛtam  
maneuṣyagnajayorbalyam yāvat viṁśativataśaram.

88. If however the colour is agreeable it suspends all faults arising from colour ; and a horse which is very strong, goes well, is large, beautiful in all its limbs, not very fierce is always to be honoured, even if spoiled by feathers.

89. The circumference of the belly is four times the size of a Bull, bull's head, three times its size is the height and three and a half times its length.

90. A bull which is seven spans high, if provided with good qualities, is to be respected. A bull which does neither stop, nor is slow, carries well, is moreover beautiful in limbs, is not very fierce, has a good back ; is called the best bull.

91. A camel, which goes daily thirty yojanas while carrying Camel loads, is ten spans high, very strong and has a fine head, is praised

92. A hundred years is recorded as the longest life of men and elephants, the youth of men and elephants is reckoned up to twenty years. Age of men and elephants

<sup>163</sup> "navatalaśca" is a different reading in one MS.

93. Nṛṇām hi madhyamam yāvat ṣaṣṭivarsam vayassmṛtam  
asitivatsaram yāvat gajasya madhyamam vayah.

94. Catustrīhsat tu varṣāṇām aśvasyāyuh param smṛtam  
pañcavimśati varṣam hi param ayurvr̄ṣoṣrayoh.

95. Bālyam aśvavṛṣoṣtrāṇām pañcasatiḥvarsaram matam  
madhyamam yāvat sōdaśabdam vārdhakyam tu tatah  
param.

96. Dantāṇām udgamaivarpairayurjñeyam vr̄śāvayoh  
aśvasya ṣaṭ sitā dantah prathamabde bhavanti hi.

97. Kṛṣnalohitavarṇāstu dvitiye'bde hyadhogatāb,  
tr̄tiye'bde tu sandaṁśau madhyamau patitodgatau.

98. Tatpārēvavartinau tau tu eaturthe punarudgatau,  
antyau dvau pañcaniabde tu sandaṁśau punarudgatau.

93. The middle age of men is estimated to last up to sixty years,  
the middle age of an elephant up to eighty years.

94. On the other hand thirty-four years are considered as the Age of  
utmost age of horses, while twenty-five years are surely <sup>horses,</sup>  
the highest age of bulls and camels.

95. The youth of horses, bulls and camels extends up to five Age of  
years, the middle age up to sixteen years, but after-<sup>bulls and</sup>  
wards is old age. <sup>camels.</sup>

96. By the growth and colour of the teeth the age of bulls and Teeth of  
horses can be known. Six white teeth are surely in the <sup>horses.</sup>  
first year of a horse,

97. but in the second year the lower teeth become dark red  
coloured, in the third year the middle biters fall out  
and come again;

98. in the fourth year those two on their sides fall out and  
come again, in the fifth year the two biters at the end  
fall out and come again;

99. Madhyapāravāntagau dvau dvau kramat kṛṣṇau ṣaḍ-  
abdataḥ ; 200  
navamābdat kramat pīṭau tau sitau dvādaśabdataḥ.  
100. Daśapañcābdataḥ tau tu kācābhau kramataḥ smṛtau  
aṣṭādaśabdataḥ tau hi madhvābhau bhavataḥ kramat.  
101. Śaṅkhābhau cūkavīṁśabdat caturvīṁśabdataḥ ṣaḍ  
chidram sañcalanam pāṭo dantānam ca trike trike. 205  
102. Prothe suvalayastisraḥ pūrṇāyuryasya vājinah,  
yathā yathā tu hīnāstā hīnam ayustathā tathā.  
103. Janūtpāto tvosthavadyo dhūtapsṛṣṭo jalasanaḥ  
gatiṁadhyāsanah pr̄ṣṭhapati paścādgamordhvapāt.  
104. Sarpaṁjihvo rūkṣakāntirbhīruraśvō'tininditah,  
sacchidraphālatilako nīndya sārayakṛt tathā. 210

99. from the sixth year the two middle, side and end teeth  
become gradually black, each pair becomes in its turn  
yellow from the ninth year; and white from the  
twelfth year.

100. From the fifteenth year each pair is said to become in  
its turn glass-coloured, from the eighteenth each pair  
becomes by degrees honey-coloured;

101. from the twenty-first year each pair becomes shell-coloured,  
from the twenty-fourth each pair becomes in each third  
year hollow (24th-26th year), shaky (27th-29th), and  
falls out (30th-32nd).

102. The horse which has three deep wrinkles in the nostrils has  
a long life; in proportion as the wrinkles are deficient  
the life is also limited.

103. A horse which jumps up on its knees, makes a noise with its  
lips; sits down in water, stands still in the midst of the  
road, falls on its back, jumps upwards while going  
backwards,

104. which has a tongue like a serpent, is of disagreeable colour,  
and timid is much despised; despised is also a horse  
whose mark on the forehead has flaws and which stands  
often still.

105. Vṛṣasyāśau sitā dantāḥ caturthe'bde'khilāḥ smṛtāḥ,  
dvāvanyau patitotpannau pañcāme'bde hi tasya vai.

106. Saṁsthē tūpāntyau bhavataḥ saptame tatsamipaganū,  
aṣṭame patitotpannau madhyamanū daśanau khalu. 215

107. Kṛṣṇapitāraktaśāṅkhačchāyau dvike dvike  
kramat̄ hi dve ca bhavataḥ calanam patanam tataḥ.

108. Uṣṭrasyoktaprakāreṇa vayojñānam tu vā bhavet.

109. Prerakākarṣakamukho'nikuśo gajavinigrahe  
hastipakaīrgajastena vineyassugamaya hi. 220

110. Khalinasyordhvakhandaḥdau dvau pārśvagau dvādaśāṅgu-  
lau  
tatpārśvāntargatābhyaṁ tu sudṛḍhabhyam tathaiva ca.

105. Eight complete white teeth are mentioned as existing in Teeth of a ball.  
the fourth year of the bull, in its fifth year two molars  
fall out and rise again;

106. in the sixth year the two next to the molars, in the seventh  
the two next ones, in the eighth year the two middle  
biters fall and come again.

107. Every second year they get by degrees black, yellow, white,  
red and shell-coloured. Each pair becomes gradually  
loose and falls out.<sup>\*\*\*</sup>

108. The knowledge of the age of a camel may be likewise Age of a camel.  
reckoned according to the above-mentioned rule.

109. For training an elephant a hook is used by the elephant-  
drivers, which has one point for driving on and another  
for drawing back; by this hook the elephant is guided  
to go well.

110. The two upwards and sideways pointing parts of a bridle- Bridle.  
bit are respectively on the whole twelve aṅgulas long,  
with two inside but very strong pieces.

<sup>\*\*\*</sup> Black in the 9th and 10th year, yellow in the 11th and 12th, white in the  
13th and 14th, red in the 15th and 16th, shell-coloured in the 17th and 18th,  
in the 19th the end teeth get loose, in the 20th the end teeth fall out and  
the last but one become loose, &c. &c.

111. Vārakākarṣakhaṇḍabhyām rajvarthavalayair yutau  
evamvidhakhalinenā vāśikuryāt tu vājinam. 225

112. Nāśikākarṣarajvā tu vṛṣoṣṭram vinayet bhr̄sam  
tīkṣṇagro yah saptaphālah syāt eṣām malaśodhane.

113. Sutādānairvineyā hi manusyah pāśavah sadā,  
sainikāstu viśeṣena na te vai dhanadāṇḍataḥ.

114. Ante tu vṛṣāśvānām gajoṣṭrāṇām tu jāṅgale  
sādhāraṇe padatīnām niveśat rakṣanām bhavet. 230

115. Śatam śatam yojanānte sainyam rāṣṭre niyojayet.

116. Gajoṣṭravṛṣabhaśvāḥ prāk śreṣṭhāḥ sambharavahane ;  
sarvebhyaḥ ḍakaṭāḥ śreṣṭhā vāsakālām vīnā smṛtāḥ.

117. Na cālpasādhanō gacchet api jetum ripum laghum  
mahatātyantasaḍyaskabalenaiva subuddhiyuk. 235

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111. and are joined with rings for reins both for stopping and pulling back; with such a bridlebit one may manage a horse.

112. One may guide firmly a bull with a rein pulling through Bullrein, its nose, in cleaning them of dirt should be (used) an instrument with seven sharp-pointed combs.

113. Men and beasts should certainly always be managed by severe beating; but soldiers specially; they should not be subjected to fines.

114. By keeping horses and bulls in a marshy country, elephants in a jungle (and) foot-soldiers in a plain, their safety will be ensured.

115. At the end of each yojana,<sup>142</sup> a king should keep in his Distr. inhabited kingdom a troop of one hundred soldiers. of troops.

116. Elephants, camels, bulls and horses are in the order of precedence excellent for carrying provisions, better than all these are stated to be cars, except in the rainy season.

117. A wise general should not march even against a weak enemy insufficiently prepared, but only with a very numerous army consisting of troops of the line. Precepts on fighting and ruling.

<sup>142</sup> A *yōjana* is a measure of different length, its shortest extent amounts to 2½ and its longest to about 15 English miles; it is generally fixed at 4 kroas or 9 English miles.

118. Asikṣitam asāram ca sādyaskam talavaco tat,  
yuddham vīnā'nyakāryesu yojayet matimān sadā.

119. Vikartum 'yatate'lpo'pi prāpte prāṇātyaye'nīśam  
na puuḥ kintu balavān vikārakaraṇakṣamah.

120. Apibahubalo'sūro na sthātum kṣamata rāne      240  
kim alpasthano'sūrah sthātum tākto'rīṇā samam?

121. Susiddhālpabalassūro vijetum kṣamata ripum,  
mahāsusiddhabalayuk śūrah kim na vijeyati.

122. Maulasikṣitasāreṇa gacchet rājā rāne ripum  
prāṇātyaye'pi maulam na svāminam tyaktum icchati.      245

123. Vāgdandaparūṣenaiva bhṛtihrasena bhititah  
nityam pravīśayāsabhyām bhedo'vaśyam prajāyate.

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118. An undisciplined and inefficient line is (weak) like cotton ;  
a wise man should always apply it to all other purposes  
but fighting.

119. A weak person, if he is in danger of his life, tries always  
to fight, how much more a strong one, who is able  
to attack ?

120. A coward though he has a very strong army cannot stand  
in the battle-field, how can a coward with small support  
stand in a battle ?

121. A hero who has a small but well-disciplined army is able  
to conquer the enemy ; (if so) will not a hero with a  
strong well-provided army conquer ?

122. A king should go to battle against an enemy with an  
efficient and disciplined reserve, the reserve does not wish  
to leave his master even when in danger of death.

123. Discontent arises necessarily from severe reprimands and  
severe punishments, from fear, from reductions of pay,  
from always sojourning abroad and from fatigues.

124. Balam yasya tu sambhinnam manak api jayaḥ kutah  
śatruḥ svasyāpi senāyā ato bhedam vicintayet.

125. Yathā hi śatrusenayā bhedo'vnyam bhavet tathā,  
kauñilyena pradānena drak kuryāt nrpatih sadā. 250

126. Sevayātyantaprabalam natyā cārim prasādhayet  
prabalam māṇḍanābhyyam yuddhairhīnabalam tathā.

127. Maitryā jayet samabalam bhedaḥ sarvān vāsam nayet,  
śatrusamśādhanopāyo nānyāḥ subalabhedataḥ. 255

128. Tavat paro nītimān syāt yāvat subalavān svayam  
mitram tavat ca bhavati puṣṭagnēḥ pavano yathā.

129. Tyaktam ripubalam dhāryam na samūhasamipataḥ  
prthak niyojayet prāk vā yuddhārtham kalpayet ca tat.

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124. How can be victory to him, whose army is even a little discontented ? he should therefore always investigate the discontent which exists in his army and in that of his enemy.

125. That discontent should necessarily prevail among the hostile army, a king should always speedily endeavour by deceitful means and bribes.

126. One should propitiate an overpowerful enemy by submission, a powerful one by demonstration of respect and <sup>towards an</sup> enemy. Behaviour by presents, and a weak one (one should subdue) by fighting.

127. He should win over an equal in strength by friendship ; by divisions he should subdue all. There is no other means of subduing an enemy than by (spreading) discontent among his strong army.

128. As long as an enemy is powerful he is able to govern, and so long he is a friend ; as the wind is (a friend) of the strong fire.

129. The hostile army which has deserted to the king must be protected, but not kept near his own army ; he should place it separately or arrange it in front for fighting.

130. Maitryam arat prsthabhage parsvavorya balam nyaset. 260  
 131. Asyate kṣipyate yat tu mantrayantragnibhiśca tat  
astram tadanyataḥ śāstram asikuntādikam ca yat.  
 132. Astram tu dvividham jñeyam nālikam māntrikam  
tathā.  
 133. Yada tu māntrikam nāsti nālikam tatra dharayet  
saha śastrena nrpatirvijayārtham tu sarvada. 265  
 134. Laghudirghākāradhārabhedaiḥ śāstrāstranāmakaṁ  
prathayanti navam bhinnam vyavahārāya tad vidah.  
 135. Nālikam dvividham jñeyam bṛhatkṣudravibhedaṭaḥ.  
 136. Tiryagūrdhvacchidramūlam nālam pañcavitaṭikam;  
mūlāgrayorlakṣyabheditilabinduyutam sada. 270

130. He should place the friendly army near in the rear or on both sides.

131. Whatever is thrown or cast by incantation, machine or fire Projectiles  
is a projectile, what is different is a weapon like the <sup>and</sup> weapons.  
sword, the spear, &c.

132. The projectile weapon must be known to be of two kinds, Incanta-  
tion arms,  
that consisting of tubes and that thrown by incantation. guns,  
133. If here there are no incantation-arms a king should always <sup>and other</sup> weapons.  
keep for the sake of victory the tubular arms together  
with other weapons.

134. According as a new weapon and missile varies in its size, experts name it differently.

135. The tubular weapon should be known as being of two kinds, divided into large and small.

136. The tube is five spans long, its breech has a perpendicular Gun.  
and horizontal hole, at the breech and muzzle is always  
fixed a sesambead for aligning the sights.

137. Yantrāghatāgnikṛt grāvocūrṇadhr̥k karnamūlakam  
sukāṣṭhopāṅgabudnam ca madhyangulabilāntaram.

138. Svante'gnicūrṇasandhāt̄salakāsaḥyutam dṛḍham  
laghunālikam apyetat pradhāryam pattisādibhiḥ.

139. Yathā yathaitat tvaksāram yathā sthūlabilāntaram      275  
yathā dirghabṛhadgolam dūrabhedi tathā tathā.

140. Mūlakīlabhrāmat̄ lakṣyasāmasandhanabhāji yat  
bṛhannālikasāñjñām tet̄ kāṣṭhabudhnāvivarjītam  
pravāhyam sakaṭādyāistu suyuktam vijayapradam.

141. Suvaroilavanāt̄ pañca palani gandhakat̄ palam      280  
antardhūmavipakvārkaśnuhyādyāngārataḥ palam ;

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137. The breech has at the vent a mechanism which, carrying stone and powder, makes fire by striking. Its breech is well wooded at the side, in the middle is a hole an angula broad;

138. after the gunpowder is placed inside, it is firmly pressed down with a ramrod. This is the small gun which ought to be carried by foot-soldiers.

139. In proportion as its outside (bark) is hard, its hole is broad, its ball is long and broad; the ball reaches far.

140. A big tube is called (that gun) which obtains the direction of the aim by moving the breech with a wedge; its end is without wood; but it is to be drawn on ears, &c.; if well welded it gives victory.

141. Five weights (pala) of saltpetre, one weight of sulphur, Gun-one weight of charcoal, which consists of *Calotropis gigantea*, of *Euphorbia neriiifolia*, and other (plants) and is prepared in such a manner that the smoke does not escape;

142. Śuddhāt saṅgrahya sañcūrṇya sammilya prapuṭet rasaiḥ  
snuhyarkānām rasoṇasya ḍosayet atapena ca ;  
piṣṭva śarkaravat caitat agnicūrṇam bhavet khalu. 285

143. Suvarcīlavaṇāt bhāgāt sat̄ vā catvāra eva vā  
nālastrarthāgnicūrṇe tu gandhaṅgārau tu pūrvavat.

144. Golo lohamayo garbhaguṇikāt kevalo'pi vā  
sisasya laghunālārthe hyanyadhatubhavo'pi vā.

145. Lohasāramayam vāpi nālastram tvanyadhatujam  
nityasammārjanasvaccham astrapātibhirāvṛtam. 290

146. Āṅgārasyaiva gandhasya suvarcīlavaṇasya ca  
śilāya haritālasya tathā sisamalasya ca.

147. Hiṅgulasya tathā kāntarajasaḥ karpurasya ca  
jatornilyāśca saralaniryāsasya tathaiva ca.

142. If all this is taken after having been cleansed, is then powdered, and mixed together, one should squeeze it with the juice of *Calotropis gigantea*, *Euphorbia norifolia* and *Alliaceae sativum* and dry in the sun ; having ground this like sugar, it will certainly become gunpowder.

143. There may be six or even four parts of saltpetre in the gunpowder used for tubular arms, but the parts of sulphur and charcoal remain as before.

144. The ball is made of iron, and has either small balls in its inside or is empty ; for small tubular arms it should be of lead or of any other metal.

145. The tubular projectile weapon is either of iron or of another metal, it is every day to be rubbed clean, and covered by gunners.

146. With a similar greater or less proportion of charcoal, sulphur, and saltpetre, of realgar, of opiment and likewise of graphite ;

147. of vermillion, also of powder of magnetic iron oxide and of camphor, of lac, and of indigo and likewise of the pine gum (*Pinus longifolia*),

148.	Samanyunādhikhairamśairagnicūrṇanyanekaśah kalpayanti ca vettājāḥ candrikābhādimanti ca.	295
149.	Kṣipanti cāgnisamhyogāt golam lakṣe sunālagam.	
150.	Nalastram śodhayet adau dadyāt tatrāgnicūrṇakam ; niveśayet tat dañḍena nālamūle yathā dr̄ḍham.	
151.	Tataḥ sugolaksam dadyāt tataḥ karṇe'gnicūrṇakam, karṇacūrṇāgnidānena golam lakṣye nipātayet.	300
152.	Lakṣyabhedi yathā bāno dhanurjyāviniyojitaḥ bhavet tathānusandhaya dvihastaśca śilimukhaḥ.	
153.	Aṣṭāśāra prthubudhnā tu gada hṛdayasamhitā ; paṭṭiśah svāsamo hastabudhnāśobhayat omukhaḥ.	305

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148. experts make gunpowder in many ways and of white and other colours.

149. By the application of fire they throw the ball coming from Gun-ball. the tube at the mark.

150. One should clean the tube first and then put gunpowder, About loading carry it down with the ramrod to the bottom of the tube and cleaning till it is tight, a gun.

151. then put a good ball, and place gunpowder on the vent, and by setting fire to the powder at the vent discharge the ball towards its mark.

152. In order that the arrow despatched by the string of the Bow, bow should penetrate the object aimed at, the arrow <sup>arrow.</sup> which is put on should be two cubits long.

153. A club is octagonal, but broad at the end, rising (from the Club, ground) up to the heart; a battle axe is of the same <sup>Battle</sup> <sub>axe.</sub> height (as the bearer), is in the middle one cubit broad and is double-headed.

154. Isadvaktraścaikadhāro vistare caturāngulah  
kṣuraprīnto nābhisamo dṛḍhamuśīssueandraruk  
khadgah, prāśacaturhastadarḍabudhnaḥ kṣurānanah.

155. Daśahastamitah kuntah phālagraḥ saṅkubudhnakah.

156. Cakram ṣad hastaparidhi kṣuraprīntam sunalbhīyuk,  
tri hastadarḍah triśikho, loharajjuḥ supāśakah

157. Godhūmasambhitasthūlapatram lohamayam dṛḍham,  
kavacam saśirastrāṇam īrdhvakīyavīśobhanam.

158. Tīkṣṇāgram karajam śreṣṭham lohasāramayam dṛḍham.

159. Yo vai supuṣṭasambhārah tathā ṣadgunamantravit  
bahvaetrusahyuto rājā yoddhūm iechet sa eva hi,  
anyathā duḥkham āpnoti svarājyāt bhrāsyate' pi ca.

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154. The sword is a little curved, has one blade, is four angulas Sword.  
broad, at the point sharp as a razor, reaches up to the  
navel, has a strong hilt and is as brilliant as the  
beautiful moon. The broad sword is four cubits long, Broad  
sword (at the hilt), and at the end-point sharp like a  
razor.

155. The lance is ten cubits long, ending in a (metal) point, Lance.  
and broad as a shaft.

156. The disk is six cubits in circumference, is at the edge Disk.  
like a razor and is to be handled in the very midst; Trident.  
the trident is three cubits long; a good lasso has iron Lasso.  
strings.

157. Armour consists of scales of the breadth of a grain of Armour.  
wheat, is of metal and firm, has a protection for the  
head, and is ornamented on the upper part of the body.

158. The fingertip of a gauntlet which is sharp at its end, is Gauntlet.  
of metal and is strong, is surely the best.

159. That king who has well supplied provisions, knows the Re却是  
secret of the six principles of policy (see 41. 174), and about  
has many weapons, wishes certainly to fight; if he is  
not in such position (and fights), he experiences  
distress, and is even expelled from his kingdom.

160. Ābibhratoḥ śatrubhāvam ubhayoḥ samyatātmanoḥ  
astradyaiḥ svarthasiddhyartham vyāpdro yuddham  
ucyate.

161. Mantrāstrairdaivikam yuddham, nāladyaiśca tatha 320  
suram  
śastrabāhusamuttham tu māṇavam yuddham īritam.

162. Ekasya bahubhiḥ sārddham bahūnām bahubhiśca vā  
ekasyaikena vā, dvābhyaṁ dvayor vā, tat bhavet khalu.

163. Kalam deśam śatrubalam drṣṭvā sviyabalām tataḥ  
upāyān ṣadgunām mantram sambhūyat yuddhakāmu- 325  
kāḥ.

164. Śarodhemantaśīrakālo yuddheśu cottamāḥ  
vasanto madhyamo jñeyo'dhamo grīṣmaḥ smṛtaḥ sada.

165. Varsisu na praśānsanti yuddham śāma smṛtam tada.

160. The exertion of two self-controlled (parties) who harbour Definition  
enmity against each other with projectile weapons of war.  
and other arms for the accomplishment of their own  
benefit, is called war.

161. The fighting with incantations and projectile weapons Different  
is called divine, that with tubes and other instruments mode of  
demoniac, that with weapons and the arms (of the  
body) is human.

162. If one fights with many, or many fight against many, or  
one fights against one, or two against two, that is surely  
a contest.

163. Having considered the time, place, the hostile army and  
also his own, the (four) expedients (*i.e.*, negotiation,  
bribery, dissension and attack), the secret of the six  
principles of policy, he should think of war.

164. Autumn, winter and the chilly season are the best for Seasons of  
fighting, spring time should be regarded as middling, the year to  
be considered.  
and the hot season always as the worst.

165. In the rainy season they do not recommend war; for that  
time negotiation is advised.

166. Yuddhasambhārasampanno yadādhikabalo nrpah  
manotashī susakunośpāti kālah tada śubhah. 230

167. Kary'styavaśyake prāpte kālo no cet yada śubhah  
nidhaya hr̥di viśvēśam gehe cihnam iyat tada.

168. Na kalaniyamah tatra gostrivipravinasane.

169. Yasmin deśe yathākālam sainyavyāyāmabhūmayah  
parasya viparitāśa smṛto deśah sa uttamah.<sup>146</sup> 235

170. Ātmanāśa pareśam ca tulayavyāyāmabhūmayah  
yatra madhyama uddiṣṭo deśah ṣastravicintakaiḥ.<sup>147</sup>

166. When a king has acquired all war materials, is very strong, persevering in his mind, (and) has obtained auspicious omens, then is the time.

167. But if the business is unavoidable, and the time is not Unavoidable propitious, he should go, after having meditated in war to be his mind on the Supreme Spirit and placed a (divine) accepted symbol in his house.

168. There is no restriction as to time (for fighting) when cows, women, and Brahmans are being destroyed.

169. That position in which there are at the necessary time Manœuvring fields fit for the manœuvring of troops, the position of the enemy being in this respect different, is mentioned as the best.

170. If his own good manœuvring fields and those of his enemies are equally good, the position is called a middling one by war experts.

<sup>146</sup> See Kamandakiya, XVI, 19.

<sup>147</sup> See Kamand., XVI, 20.

Ātmanāśa pareśam ca tulayavyāyāmabhūmayah  
sumadhyamah sa uddiṣṭo deśah ṣastrarthaścintakaiḥ.

171. Aratisainyavyāyāmasuparyāptamahitalaḥ  
atmano viparītaśca sa vai deśo'dhamak śnītah.<sup>145</sup>

172. Svāsainyāt tu tritiyāṁśahinam śatrubalam yadi  
asikṣitam asāram vā sādyaskam svajayāya vai. 340

173. Putravat pālitam yat tu dānamānavivardhitam  
yuddhasambhārasampannam svāsainyam vijayapradam.

174. Sandhim ca vigrahām yānam āsanam ca samāśrayam  
dvaidhibhāvam ca saṁvidyāt mantrasyāntāstu ṣadguṇān 345

175. Yabhiḥ kriyābhiḥ balevān mitratam yati vai ripuḥ  
sā kriyā sandhīrityuktā vimṛśet tām tu yatnataḥ.

176. Vikarṣitāḥ san vādhino bhavet śatrustu yena vai  
karmaṇā vigrahām tām tu cintayet mantribhirnṛpah.

171. If the ground is favorable for the manoeuvres of the army of the enemy, his position being quite the reverse, that position is mentioned as the worst.

172. If the hostile army is a third part less than his own, if its line is undisciplined and inefficient, (such circumstances) ensure his own victory.

173. If his own army is guarded like a son, is gratified by presents and honours, is provided with the materials for war, it is conferring victory.

174. He should understand the six principles of policy; alliance and quarrel, marching, halting, refuge and separation. Six principles of policy.

175. By what practices a strong enemy is won over to friendship, Alliance. that practice is called alliance; he should consider it anxiously.

176. A king should deliberate with his ministers about the war, War. by means of which his enemy may be injured and rendered dependent.

<sup>145</sup> See Kāmand., XVI, 21.

177. Śatrunāśārthagamanam yānam svābhīṣṭasiddhaye      250  
svarakṣanam śatrunāśo bhavet sthanāt tadasanam.

178. Yaigupto balavaṇ bhayāt durbalo'pi sa āśrayaḥ,  
dvaidhibhāvaḥ svasaṁyānām sthāpanam guimagulma-  
taḥ.

179. Balyasābhiyuktastu nrpo'nanyapratikriyah  
āpannah sandhim anvicchet kurvāṇah kālayāpanam.      255

180. Eka evopahārastu sandhireesa mato hitaḥ,  
upahārasya bhedāstu sarve'nye maitravarjitaḥ.<sup>149</sup>

181. Abhiyokta balyastvāt alabdhyā na nivartate  
upahāradṛte yaṣmat sandhiranyo na vidyate.<sup>150</sup>

177. The going for the destruction of the enemy for the fulfil- Marching-  
ment of his own desires is marching; if through  
staying his own safety and his enemy's destruction is Halting,  
obtained, that is halting.

178. The protection which makes a weak man become strong, is Refuge.  
called refuge; the placing of his own armies in Separation.  
different corps is separation.

179. If a king is attacked by a strong enemy and is not able to Political  
resist, he should (thus) afflicted make peace, obtaining advice.

180. Alliance alone is regarded as a pleasant tribute; but all  
the other kinds of tributes are destitute of friendship.

181. As an enemy who has not received any benefit from his  
superior strength does not return (to his country);  
therefore no peace is known without a tribute.

<sup>149</sup> See Kāmand., IX, 21, and Hitopadeśa, IV, 126.

<sup>150</sup> See Kāmand., IX, 22.

Abhiyokta balyasmat alabdhyā na nivartate  
upahārast rie yaṣmat sandhiranyo na vidyate.

182. Śatrorbalanusāreṇa upahāram prakalpayet  
sevīm vāpi ca svikuryāt dadyat kanyām bhuvam dha-  
nam. 360

183. Svāśmantāñśca sandhiyāt maitrepānyajayāya vai  
sandhib kāryo'pyanāryeṇa samprāpyotsādayet hi sab.

184. Saṅghātavān yathā venurnividaḥ kantakairvṛtaḥ  
na tākyate samucchetum veṇuh saṅghātavānsthā.<sup>131</sup> 365

185. Balina saha sandhaya bhaye sādhāraṇe yadi,  
ātmānam gopayet kāle bahvamitresu buddhimān.

186. Balina saha yoddhavyam iti nāsti nidarśanam  
prativātam hi na ghanaḥ kadacit̄ api sarpati.<sup>132</sup>

182. He should settle a tribute according to the strength of his enemy, or he should agree to do homage, or should give his daughter, land or money.

183. For the sake of conquering his enemy he should make an alliance with his neighbours; an alliance is even to be made with an unworthy ruler; having gained his object he may destroy him.

184. As a clump of bamboos surrounded by thick thorns cannot be torn out, thus also could not be annihilated Veṇu (?) who had a multitude of followers.

185. A wise king who has many enemies should guard himself in calamity by making an alliance with a strong king, who is exposed to the same danger.

186. There exists no example (to show), that one should fight with a strong enemy; a cloud surely does not move against the wind.

<sup>131</sup> See Hitop., IV, 26.

Saṅghatvat yathā Venurnividaḥ kantakairvṛtaḥ  
na tākyate samucchetum bhrat̄saṅghātavānsthā.

Pāc., III, 50. Saṅghātavān yathā venurnivido veṇubhirvṛtaḥ  
na tākyate samucchetum durhalopi taṭha nṛpaḥ.  
Kamandakiya, IX, 46.

Saṅghātavān yathā venurnividaḥ kantakair vṛtaḥ  
na tākyate samucchetum bhrat̄saṅghātavānsthā.

All MSS. of the Śukranta read Veṇuḥ saṅghātavānsthā.

<sup>132</sup> See Hitop., IV, 27; Pācatalatra, III, 22; Kamandakiya, III, 46.

187.	Balṭyasi praṇamatām kālē vikramatām api sampado na visarpanti pratīpam iva niniṇagāḥ.	370
188.	Rajā na gacchet viśvāsam sandhito' pi hi buddhimān adrohasamayam kṛtvā vṛtram indraḥ puri' vadhit. <sup>153</sup>	
189.	Āpanno' bhyudayākāṅkiṣi pīḍyamānaḥ pareṇa va desakalablopetaḥ prārabheta ca vigraham.	375
190.	Frahinabalamitram tu durgastham hyantarāgataṁ atyantavisayāsaktam prajadrvyāpahārakam; bhinnamantribalam rāja pīḍayet pariveṣṭayan.	
191.	Vigrahaḥ sa ca vijñeyo hyanyaśca kalahaḥ smṛtaḥ.	
192.	Baliyasatyalpabalaḥ śureṇa na ca vigraham kuryāt ca vigrahe punissām sarvāṇāśah prajāyate.	380

- 187 The power of those kings, who bow to a strong enemy, but fight at another time, does not glide away, as rivers do not flow against the stream.
188. A wise king does not enter into confidence even if he has made an alliance; Indra after having made friendship killed in ancient times Vṛtra.
189. When unfortunate, or hoping for success, or troubled by an enemy, one should commence war only, after having obtained the (right) place, time and army.
190. A king should besiege and oppress an enemy who is deficient in army and in friends, who stays in his fortress, who has invaded his country, who is much addicted to women, who robs his subjects of their money, and whose ministers and army are disaffected.
191. This is regarded as war, but a quarrel is regarded as a different thing.
192. A very weak one should not go to war with a strong enemy, for in such a combat of men occurs general destruction.

<sup>188</sup> See Pañc., III. 7; Kāmarūpa, IX. 50 to sloka 187; and Kāmarūpa, IX. 63 to sloka 188.

193. Ekarthabhinivesitvam karanam kalahasya va  
upayantaranase tu tato vigraham acaret.

194. Vigryha sandhaya tatha sambhuyatha prasangatah  
upeksayā ca nippunairyānam pañcavidham smritam.<sup>154</sup> 885

195. Vigryha yati hi yada servān śatrujanān balat  
vigryha yānam yānaśūniḥ tadācaryaiḥ pracaksyate.<sup>155</sup>

196. Arimitrāpi servāni svamitraiḥ servato balat  
vigryha cāribhīrgantum vigryagamanam tu vā.<sup>156</sup>

197. Sandhayānyatra yatrāyām pārṣṇigrāheṇa śatruṇā  
sandhayagamanam proktam tejjigīṣob phalārthinalah.<sup>157</sup> 390

193. If the cause of the quarrel is the desire to have one and the same object, one may proceed to war, if no other means exists (to settle the matter).

194. Five different modes of marching are mentioned by experts, Marching, a successful war march, an alliance march, a junction march, likewise an incidental march, and a contemptuous march.

195. If by his strength all hostile troops are conquered, it is called by the masters who know the marching rules, a successful war march.

196. If, when marching against one's own enemies, all the friends of the enemy are everywhere conquered through the ability of one's own friends, this is also called a successful war expedition.

197. When, while marching against one enemy, an alliance is made with another enemy, who is coming in his rear, this is called the alliance march of the king desirous success.

<sup>154</sup> See Kamand., XI, 2, instead of upaksayā ca upeksā ceti.

<sup>155</sup> See Kamand., XI, 3.

<sup>156</sup> See Kamand., XI, 4, instead of ari arer, and instead of cāribhīrgantum "cābhīgamanam."

<sup>157</sup> See Kamand., XI, 5.

198. Eko bhūpo yadaikatra sāmantāḥ samparyikaiḥ  
saktisauryayutair्यानम् sambhūtyagamanam hi tat.<sup>124</sup>

199. Anyatra prasthitaiḥ saṅgat̄ anyatraiva ca gacchati  
prasaṅgayanam tāt proktam yānavidbhīṣea mantribhīḥ.<sup>125</sup> 295

200. Ripum yātasya balinaiḥ samprāpya vikrtam phalam  
upekṣya tasmin tadyānām upekṣayānām ucyate.<sup>126</sup>

201. Durvṛite' pyakuline tu balaṁ dātari rajyate  
hr̄stam kṛtvā sviyabalam paritosyapradānatāḥ.

198. If a king marches against an enemy together with his warlike, powerful and valiant neighbours, that is called going together.

199. If, after having set out against one enemy, he marches by circumstances (compelled) against another enemy, this is called by those who understand marching and by ministers, an incidental march.

200. If, when a strong king marches against an (insignificant) enemy, an advantage not worth having has been obtained and this has been given up, this is called a march conducted with contempt.

201. An army is even attached to a bad and low born king if *Liberality*  
he is only liberal, having pleased his own army by *towards*  
*troops*. gifts of presents.

<sup>124</sup> Compare Kāmandakiya, XI, 6.  
Ekibhūya yadaikatra sāmantāḥ samparyikaiḥ  
saktisauryayutair्यानम् sambhūtyagamanam hi tat.

<sup>125</sup> Compare Kāmandakiya, XI, 9.  
Anyatra prasthitaiḥ saṅgat̄ anyatraiva ca gacchati  
prasaṅgayanam tāt proktam alaṁ salyo nidañsanam.

<sup>126</sup> Compare Kāmandakiya, XI, 10.  
Ripum yātasya balinaiḥ samprāpyavikrtam phalam  
upekṣya tanmitrāyanām upekṣayānām ucyate.

202. Nayakaḥ purato yāyāt pravirapuruṣāvṛtaḥ  
madhye kalatram kośaśca svāmī phalguca yaddhanam,<sup>161</sup>  
dhvajinim ca sadodyuktah sa gopayet divāniśam.<sup>162</sup>

203. Nadyadrivanadurgesu yatra yatra bhayam bhavet  
sonāpatib tatra tatra gacchet vyūhikṛtaibalaiḥ.<sup>163</sup>

204. Yāyāt vyuhena mahatā makareṇa purobhaye;  
śyene nobhayapakṣeṇa sūcya vā dhīrvaktrayū.<sup>164</sup>

205. Paścādbhaye tu śakaṭam pārāvayorvajrasañjñikam  
sarvataḥ sarvatobhadram cakram vyālam athāpi vā;<sup>165</sup>  
yahadeśam kalpayet vā śatrusenāvibhodakam.

206. Vyūharaśanasaṅketān vādyabhāsasamiritān

202. The commander-in-chief should go in front, surrounded by valiant men, in the midst should be the queen, the treasury, the king, and whatever ready money there is; and he should always zealously guard his army day and night.

203. Wherever, whether in a river, mountain, forest or fortress an alarm of the enemy (coming) arises, there should the general go with combined forces.

204. If the alarm arises in front, he should march in an array resembling a crocodile, a double-winged hawk or a needle with a strong point.

205. A king should form if the alarm rises in the rear what is called a cart, if on the flanks a thunderbolt, if on all sides, an everywhere impregnable figure, a wheel and an elephant for the destruction of the hostile army according to the fitness of the place.

206. No body except his own soldiers should know the intima- Signals.

<sup>141</sup> See Hit., III, 70; Kamand., XVIII, 45.

Nayakah purato yāyāt pravimprtanāvṛtaḥ  
madhye kalatram svāmī ca kōṭab phalgu mahaddhanam.

<sup>177</sup> See Kamandaktya, XVIII, 43.

<sup>143</sup> See Kamand., XVIII, 44; Hitop., III, 69; and compare Manu, VII, 155.

<sup>144</sup> See Kamand., XVIII, 48.

<sup>145</sup> See Kramd., XVIII, 49.

Pāśādbhaya tu sakaṭam pāśivayor vajrasūjīhitam  
sarvataḥ sarvatobhadram bhavyavytūkam prakalpayet.

svasainikairvina kopi na janati tathavidhan,  
niyojayet ca matimān vyuhān nānāvidhān sadā.

207. Aśvānām ca gajānām ca padātinām pṛthak pṛthak  
uccaiḥ saṁśrāvayet vyūhasaṅketān sainikān arpaḥ. 415

208. Vāmadakṣipasāṁsthō vā madhyasthō vāgrasāṁsthitāḥ  
śrutvā tān sainikān kāryam anuśiṣṭam yathā tathā.

209. Sammīlanām prasāraṇām paribhramanām eva ca  
akuñcanām tathā yanām prayāṇām apayāṇakām;

210. Paryāyena ca sammukhyam samāthānām ca luṇṭha-  
nam  
saṁsthānām cāṣṭadalavat cakravat golatulyakam; 420

211. Sūcītulyam ūkaṭaval ardhacandrasaṁmām tu vā  
pṛthagbhavaṇām alpalpāiḥ paryāyaiḥ pañktiveśānām;

212. Sastrastrayordhāraṇām ca sandhānām lakṣyabhedanām  
mokṣapām ca tathāstrāṇām ēastrāṇām parighātanām.

tions for the arrangement of troops, communicated by words or signals; and a wise man should always prescribe different formations.

207. A king should make his soldiers hear distinctly the formation-signals for the elephants, horses and foot-soldiers each separately;

208. whether he stands on the left or right, in the midst or is placed in front; the soldiers, when they hear these signals, should do according as they are taught.

209. They should concentrate, spread, wheel round, fall in, Mac-  
couvres. march, double and retreat;

210. now face or rise and lie down on the ground, or stand like an octagon, like a wheel, like a ball;

211. like a needle, like a car, or like the halfmoon, skirmish in small numbers, form rows in regular order;

212. take up weapons and arms, aim at and hit the mark, discharge missiles and strike with weapons,

213. Drāk sandhānam punah pāto graho mokṣah punah punah ;  
svagūhanam pratighātāḥ śastrāstrapadavikramaiḥ. 425

214. Dvābhyaṁ tribhiśoaturbhirvā pañktiśogamanam tataḥ ;  
tathā prāgbhavanam cāpasaranam tāpasarjanam  
apasyāstrasiddhyartham upaśtya vimokṣanam.

215. Prāgbhutvā mocayet astram vyūhasthāḥ sainikāḥ sada  
teināḥ syāt vimuktāstrāḥ prāgvā cāpasaret punah.

216. Prāgśinam tāpasṛte drṣṭvā svāstram vimooayet 430  
skaikasō dvīśo vāpi saṅghaśo bodhito yatha.

217. Krauñcanām khe gatiryādṛk pañktitāḥ samprajayate  
tadr̥k samrakṣayet krauñicavyūham desabalam yatha,

218. Sūkṣmagrīvam madhyapuccham sthūlapakṣam tu 435  
pañktitāḥ  
bhṛstpakṣam madhyagalapuccham syenam mukha  
tanum.

213. then quickly aim again, and throw, take up and discharge the arms repeatedly, cover themselves, and beat with arms, weapons and feet ;

214. further go in rows of two, three or four ; likewise, front, retire and change places ; retire for adjusting the arms and advance for the discharge.

215. A soldier when standing in his corps should always discharge his arms from the front, if he has discharged the arms he should sit down, or should leave the front.

216. But (the next soldier) advancing should discharge his weapon keeping his eye on him who sits in front, either one by one, or in twos or in numbers, according to the order.

217. As the moving of the herons proceeds in the sky, he should Formation  
arrange the herons' array, according as it is adapted to <sup>of</sup> troops.  
the country ;

218. with a thin neck, a middling tail, a bulky wing, arranged

219. Catuspād makaro dirghastholavakro dyiroṣṭhakab  
sūci sūkṣmamukho dirghasamadandāntarandhrayuk.  
220. Cakravyuhaḥ caikamārgo hyaśadha kundalikṛtah  
caturdiṣṭvastaparidhiḥiḥ sarvatobhadrasañjñikah. 440  
221. Amīrgaśaṣṭavalayi golakah sarvatomukhab  
sakataḥ sakaṭākāro vyalo vyālakṛtiḥ sada.  
222. Sainyam alpam bṛhadvāpi dṛṣṭvā mārgam ranasthalam  
vyāhairvyuhena vychābhyaṁ saṅkarenāpi kalpayet.  
223. Yantrastraib śatrusenayā bhedo yebhyāḥ prajayste,  
sthalebhhyastoṣu santishet sasainyo hyasanam hi tat. 445  
224. Trīṇūnajalasambhārt ye cānye śatruposakah  
saṁhyak nirudhya tan yatnāt paritāciram āsanāt.

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in rows, (and) a hawk-array with a broad wing, a middling throat and tail and thin at the face.

219. The crocodile has four feet, a long and broad snout and two lips. A needle has a thin face, a long and even stick-like body, and a hole at its end.  
220. The wheel array has one way, but eight coils. A figure with eight rings and with four faces is called a *Sarvato-*  
*bhādra* (a strong one on every direction).  
221. A ball has no entrance, eight circles and everywhere a face ; a cart is like a cart and an elephant has always the shape of an elephant.  
222. Having seen the army, the road, the battlefield, whether small or big, he should arrange his army in many corps, or in one or two, or in one mass.  
223. Where a gap may be made in the hostile army through Post missiles and machines, in these places the king should stand with his army ; this is called post.  
224. Having with great exertion effectually removed from his post all round and for a long time to come grass, food, water and other provisions, which maintain the enemy ;

225. Vicchinnavividhasāram prakṣinayavasaindhanam,  
vigr̥hyamānaprakṛtim kalesnaiva vāsam nayet.<sup>166</sup> 450

226. Arēśa vijigīśośa vigaṛhe hīyamānayoḥ  
sandhaya yadavasthānam sandhiyāsanam ucyate.<sup>167</sup>

227. Uochidyamāno balina nirupāya pratikriyāḥ,  
kulodbhavam satyam āryam ārayeta balotkaṭam. 455

228. Vijigīśostu sāhyārthaḥ suhrtaambandhibandhavaḥ  
pradattabhr̥tiḥ hyauye bhūpā arṁaprakalpitāḥ.

229. Saivārṇyastu kathito durgāṇi ca mahātmabbhil.

230. Anisicotpāyakāryāḥ samayānucearo nrpaḥ  
dvaidhibhāvena varteta kākāksivat alakṣitam,<sup>168</sup> 460  
pradarśayet anyakāryam anyam alambayet ca vā.

225. he should subdue in time the enemy, whose various provisions are scattered, whose corn and fuel is destroyed and whose subjects are incensed.

226. If the enemy and the king who wishes to conquer are reduced in the war, the place where they stand, when they make peace, is called the place produced by peace.

227. If a king who has no means of redress is much oppressed Refuge by a strong king he should take refuge with a king, who is well-born, righteous, venerable and of superior strength.

228. A king (who wishes to conquer) has friends, connections and relations who assist for the sake of friendship, others who have received pay, and kings on whom is settled a part (of the enemy's country).

229. By great-minded men this is surely called refuge and a fortress is also called a refuge.

230. A king, whose arrangements are not certain, looking out Duplicity for the opportune time, should practise duplicity like the concealed eye of a crow, he should pretend one thing and seize another.

<sup>166</sup> See Kāmaṇḍ., XI, 16.

<sup>167</sup> See Kāmaṇḍ., XI, 17.

<sup>168</sup> See Kāmaṇḍ., XI, 24b.

231. Sadupayaisca sanmantraih kāryasiddhirathodyamaih  
bhavet alpajanaṣyapi kim punarnṛpaterna hi.

232. Udyogenava siddhyanti kāryāṇi na manorathaih.

233. Na hi suptamrgendrasya nipatanti gaja mukhe<sup>169</sup> ;  
ayo'bhedyam upāyena dravatām upanīyate.<sup>170</sup>

234. Lokaprasiddham evaitat vāri vahnerniyāmakam  
upayopagr̥hitena tenaitat parīsosyate.<sup>171</sup>

235. Upāyena padam mūrdhni nyasyate mattahastinām<sup>172</sup>  
upāyeṣṭtamo bhedah sadguneṣu samāśrayah.

236. Karyau dyau sarvadā tau tu nr̥peṇa vijigisunā,  
tabhyam vīnā naiva kuryat yuddham rājā kadācana.

231. The success of the undertaking of even an insignificant man  
may be ensured by clever stratagems, good councils  
and efforts, would this not be surely the case with a  
king?

232. Undertakings really succeed by efforts alone and not by <sup>Necessity  
of exert-  
ing one-</sup> wishes.

233. Elephants certainly do not fall into the mouth of the self-  
sleeping lion. The iron which cannot be broken is  
brought by expedients to fluidity.

234. That the water is the subduer of the fire is surely well  
known in the world, but it is dried up by that fire if  
assisted by proper means.

235. The foot is placed on the wild elephant by stratagem.  
Among all expedients the division of friends is the best ;  
amongst the six principles of policy the refuge is the  
best.

236. These two ought always to be used by a king who wishes  
to conquer ; without these two no king could ever  
undertake a war.

<sup>169</sup> See Hitop., I, 36b.

na hi suptaṣaya nishhasya pravīṣanti mukhe mrgab.

<sup>170</sup> See Kāmaṇḍ., XI, 47b.

<sup>171</sup> See Kāmaṇḍ., XI, 49. *tenais* instead of *tenaitat*.

<sup>172</sup> See Kāmaṇḍ., XI, 46b.

237. Parasparam pratikulyam ripusenāpamantrinām,  
bhavet yathā tatha kuryāt tat prajāyāscā tat striyah.

238. Upāyān sadgunān vikṣya śatrob svasyāpi sarvadā,  
yuddham prāṇātyaye kuryāt sarvasvaharane sati. 475

239. Striviprabhyupapattau ca govinaśepi brāhmaṇaiḥ,  
prāpte yuddhe kvacinnaiva bhavet api parāṇmukhah.

240. Yuddham utsṛjya yo yāti sa devairhanyate bhr̄sam.

241. Samottamādhamaī rājā tvāhūtah pīlayan prajāḥ,  
na nivarteta saṅgrāmat kṣafrādharmam anusmaran. 480

242. Rajanam cāpāyoddharam brāhmaṇam cāpravāsinam,  
nirgilati bhūmiretau sarpo vilāsayān iva. 174

237. He should contrive so that there is mutual enmity among General  
the ministers and generals of the enemy and also among political  
advice.  
the subjects and women.

238. In case his life is in danger, or all his property is to be  
taken, he should fight having always considered the  
six-fold expedients of his enemy and of himself.

239. If he has undertaken the war for the defence of women and  
Brahmans and on account of the destruction of cows  
even if done by Brahmans, he should never turn away.

240. Who goes away having left the fight is quickly destroyed  
by the gods.

241. A king who protects his subjects if he is summoned to fight  
by equal, superior, or inferior enemies should not turn  
from the contest remembering the duty of a Kṣatriya.

242. A king who does not fight and a Brahman who does not  
travel about; these two swallows the earth, like a snake  
does the animals living in holes.

<sup>173</sup> See Manu, VII, 87.

<sup>174</sup> See Mahābhārata, Rajadharma, LVII, 1, and the observations on this  
sloka on pp. 38 and 39.

243. Brahmanasyapi capattau kṣatradharmaṇa vartataḥ,  
prāsastam jīvitam loke kṣatram hi brahmaśambhavam. 485

244. Adharmah kṣatriyasyaīsa yacchayyāmarapam bhavet,  
visṛjan ślesmapittāni kṛpanam paridevayan.<sup>175</sup>

245. Avikṣatena dehena pralayam yo' dhigacchatī  
kṣatriyo nāsyā tat karma prāśansanti purāvidah.<sup>176</sup>

246. Na gṛhe marapam śastam kṣatriyām vina rasat,  
śaṇḍirāpam asaṇḍirām adharmam kṛpanam hi yaṭ.<sup>177</sup> 490

247. Raṇesu kadaṇam kṛtvā jñatibhīḥ parivāritah  
śastrāstraibhūtuvinirbhinnah kṣatriyo vadham arhati.<sup>178</sup>

243. Even for a Brahman who lives during misfortune according to the Kṣatriya rule, it is in the world a laudable living, for a Kṣatriya is sprung from Brahmā.

244. There would be a demerit to a Kṣatriya whose death would be on a couch, emitting phlegm and bile and wailing pitifully.

245. Those persons who are acquainted with the past do not praise the death of that Kṣatriya who meets his dissolution with unwounded body.

246. The death of Kṣatriyas in a house without a combat is not praised; it would be despicable, unrighteous, and miserable.

247. A Kṣatriya has earned (a noble) death, when, surrounded by his relations, he has made a slaughter (of enemies) on the battle fields, and is well pierced with arms and missiles.

<sup>175</sup> See Mahabharata, Śantiparva, Rajadharma, XCVII, 23.

<sup>176</sup> See Mahabharata, Śantiparva, Rajadharma, XCVII, 24.

<sup>177</sup> See ibidem, 25; instead of śastam tata, and instead of vina rasat prasate.

<sup>178</sup> See ibidem, 28; but the second half of the sloka differs, for instead of it we read śikṣṇaiḥ śastrārabhīkṣṇaiḥ kṣatriye myiyam arhati. The change in the reading śikṣṇaiḥ śastraiḥ for śastrārabhīkṣṇaiḥ is significant.

248. Āhavēṣu mitho'nyonyam jīghānsanto mahikṣitah  
yudhyamānāḥ param śaktvā svargam yāntyaparāh- 495  
mukhāh.<sup>179</sup>

249. Bhartararthea yaḥ śuro vikramet vāhinimukhe  
bhayat na nivarteta tasya svargo hyanantakāḥ.

250. Āhavē nihatam śūram na śoceta kadiacana<sup>180</sup>  
nirmuktah sarvapāpebhyaḥ pāto yati salokatam.

251. Varīpsarassahaśrāpi śūram āyodhane hataṁ  
tvaramāṇāḥ pradhāvanti hyayam mama bhavet iti.<sup>181</sup>

252. Munibhīrdīrghatapasā prāpyate yat padam mahat  
yuddhabhimukhanihataḥ śūraḥ tat drāk avāpyate.

253. Etat tapasca punyam ca dharmāścaiva sanātanah  
eत्वारा आश्रमास्तस्या yo yuddhe na paīayate.<sup>182</sup> 505

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248. The rulers of the earth, who, wishing to kill each other  
in battles, are fighting with utmost strength, go to  
heaven with not averted heads.

249. That hero who fights for the sake of his king in front of the  
army, nor turns away from fear, is sure of the ever-  
lasting heaven.

250. One should never bewail a hero who is killed in battle,  
freed from all sins he goes purified to the world specially  
assigned to him.

251. Towards a hero who is killed in battle run thousands of the  
best Apsaras, saying : "this one should be mine."

252. That grand step which after long penance is obtained by  
sages, is quickly won by heroes, who are killed with  
their faces turned towards the contest.

253. He who does not run away in the battle, earns this penance,  
this merit, this primeval virtue and the four stages.

<sup>179</sup> See Manu, VII, 89 ; and Nitiprakritika, VII, 44.

<sup>180</sup> Cesspare Mahabharata, Rajadharma, XCIVIII, 43b.

<sup>181</sup> See Parāśārasmṛti, IV, 37 ; and Mahabharata, ibidem, XCIVIII, 45b  
and 46a ; the latter half sicks runs there thus : tvaramāṇābhīdīvanti  
mama bharia bhavet iti.

<sup>182</sup> See Mahabharata, ibidem XCIVIII, 46b and 47a.

254. Na hi śauryat param kīcīt triṣu lokeṣu vidyate  
śūrah sarvam pālayati śure sarvam pratiṣṭhitam.<sup>133</sup>

255. Caṇānām acārī annam adāñśṭrā dāñśṭriṇām api  
apānayāḥ pāṇimatām annam śūrasya kātarāḥ.<sup>134</sup>

256. Dvāvīmau puruṣau loke sūryamāṇḍalabhedināu  
parivṛat̄ yogayuktāśe rāṇe cabbhimukho hataḥ.<sup>135</sup>

257. Ātmānām gopayet śaktō vadhenāpyātatāyinah,  
suvidyabrahmaṇaguroryuddhe śrutinidarśanāt.

258. Ātatāyitvam apanno brāhmaṇaḥ śudravat̄ smṛtabh  
nātatāyivadhe doṣo hanturbhavati kaścana.<sup>136</sup>

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254. In the three worlds there is nothing known better than heroism, the hero protects all, in a hero all is fixed.

255. The food of moving beings is the immoveable, of those who have fangs those that have no fangs, of those who have hands those who have no hands; the food of the hero is the coward.

256. These two persons in the world have penetrated to the sphere of the sun, the devotee who is immersed in deep meditation, and he who is killed, whilst turned to the battle.

257. A strong man may according to the order of the Veda protect himself in the battle by slaying a preceptor, who is a learned Brahman, if he attempts his life. When a Brahman murder allowed.

258. A Brahman who has committed a murder is regarded as a Śudra; for the murder of an assassin no fault whatever is to be found with the person who kills him.

<sup>133</sup> See Mahābhārata, ibidem, XCIX, 18.

<sup>134</sup> See Mahābhārata, ibidem, XCIX, 15.

Caṇānām acārī hyānām adāñśṭrā dāñśṭriṇām api  
apāḥ pāṇimatām annam annam śūrasya kātarāḥ.

<sup>135</sup> See Parāśaraśmyti, IV, 32.

<sup>136</sup> Compare Manu, VIII, 351a.

259. Udyamya śastram ayāntam bhrūṇam apyātāyinam  
nihatya bhrūpahā na syat ahavā bhrūpaha bhavet.<sup>127</sup>

260. Apasarati yo yuddhat jīvitārthi narādhamaḥ  
jīvan eva mṛtah sopi bhunkte rāṣṭrakṛtam tvagham.

261. Mitram vā svāminam tyaktvā nirgacchati ranat ca yah      520  
so'nte narakam āpnoti sa jīvan nindyate'khilaiḥ.

262. Mitram āpadgatam dr̄stvā sahāyam na karoti yah  
akirtam labhate so'tra mṛto narakam rochati.<sup>128</sup>

263. Visrambhāt śarapam prāptam śaktah tyajati durmatih  
sa yāti narake ghore yāvat indrāścaturdaśa.      525

259. He who has raised a weapon against an approaching assassin, though this be a Vaidika Brahman, (and) killed him, should not be considered as a Vaidikabrahman-murderer ; if he has not killed him, he should be regarded as such.

260. He who desirous of his life goes away from the battle is a Punishment of cowardice. very bad man, though alive he is surely dead ; he has to bear the sin done in the realm.

261. He who, having left his friend or his king, goes from the battle field, goes at his death to hell, and is blamed by all during his life.

262. He who, having seen his enemy going into danger, does not help him, acquires infamy here and goes, when dead, to hell.

263. The wicked, who though strong, deserts him who confidently comes to him for protection, stays in a fearful hell, as long as there are fourteen Indras.

<sup>127</sup> See Mahabharata, Śantiparva, Rajadharma, LVI, 28-30, and p. 38.

Compare Manu, VIII, 350.

Gurum vā balaśuddhau vā brahmaṇam vā bahūśrutam  
ātāyinam ayāntam hanyat eva vicarayat :

and about Śāṅkara Manu, VIII, 317.

<sup>128</sup> Compare with this and the preceding Ślokas the Mahabharata as above, 20-21.

264. Sudurvṛttam yadā kṣatram nāśayeystu brāhmaṇah  
yuddham kṛtvāpi ṣastrastrairna tadā pāpabhaṅgaiḥ.  
265. Hinam yada kṣatrakulam nicairlokaḥ prapidyate  
tadapi brahmaṇa yuddhe nāśayayuḥ tu tāṁ dhruvam. 530

266. Uttamam māntrikāstrena nālikāstreṇa madhyamam  
ṣastraiḥ kaniṣṭham yuddham tu bāhuyuddham tato'dha-  
mam.  
267. Mantreritamahāśaktibāpādyaiḥ ḫatrūnāśanam  
māntrikāstrenatat yuddham sarvayuddhottamam smṛtam  
268. Nalagnicūrṇasanyogat lakṣe golanipātanam  
nālikāstrena tat yuddham mahārāsakaram ripoh. 535  
269. Kuntādiṣastraśāṅghatairnāśanam ripūṇū ca yat  
ṣastrayuddham tu tat jñeyam nalastrābhāvataḥ sūdā.  
270. Karṣāṇaiḥ sandhimarmāṇām pratiłomāṇulomataḥ  
bandhanairghatanam ḫatroryuktya tat bāhuyuddhakam.

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264. If the Brahmins should even with arms and missiles destroy  
in a war bad behaving Kṣatriyas, they do then commit  
no sin.  
265. If, when the Kṣatriya caste is weak, the world is oppressed  
by mean persons, then also should the Brahmins surely  
destroy those in war.  
266. The best fight is with enchanted missiles, the middling is Modes of  
with tubular projectile weapons, the lowest with Fighting.  
weapons, the worst is fighting with the arms.  
267. The destruction of enemies by arrows and other weapons of  
great force and despatched by spells, and by enchanted  
missiles, is recorded as the best fighting of all.  
268. The throwing of a ball by a tubular instrument through the  
application of gunpowder and a tube is very destruc-  
tive to the enemy.  
269. The destruction of the enemy which takes place by means  
of lances and other weapons, is always to be known  
as the combat with weapons in the absence of tubular  
projectile weapons.  
270. The killing of the enemy by injuring his joints and vital

271. Nalastrāpi puraskṛtya laghūni ca mahānti ca  
tat pr̄ythagāñcas padātān gajāśvān pārvayoh sthitān  
kṛtvā yuddham prārabheta bhinnamātyabalarinā

272. Sammukhyena prapātena pārvabhyām apayānatāh  
yuddhānukulabhūmestu yavallabha stathāvidham.

273. Sainyārdhāñṣena prathamam senapairyuddham iritam  
amātyagopitaiḥ pāscāt amātyaiḥ saha tat bhavet,  
nr̄pasaṅgopitaiḥ pāscāt svataḥ prāṇātyaye ca tat.

274. Dirghadhvani pariśrāntam kṣutpipasahitaśramam<sup>129</sup>  
vyādhidurbhikṣamaranaiḥ pīḍitam dasyuvidrutam;<sup>130</sup>

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parts, by tossing him backwards and forwards, and by grasping him, is properly regarded as the fighting with the arms of the body.

271. Having placed the small and big guns in front; and behind them the infantry, and on the two flanks the elephants and horses, he should begin the battle, when the hostile army and ministers are disunited,

272. by attacking the enemy in front, by falling on him with the two wings, by retreating, in such a manner so far as the advantage of the ground favours the combat.

273. The battle should be first opened by generals with half the army, it should then be continued by the ministers with the troops under their command, and at last by the king himself with the troops under his special orders, when life at large is at stake.

274. If his own army is exhausted by a long march, experiences distress through hunger and thirst, is destroyed by disease, famine and death, is alarmed by marauders;

<sup>129</sup> See Hitop., III, 108a.

Dirghavartmapariśrāntam nadyadrivanasatkulam.

<sup>130</sup> See Kāmand., XVIII, 50.

Dirghedhvani pariśrāntam kṣutpipasahimaklamam  
vyādhidurbhikṣamarakalp pīḍanam dasyuvidrutam.

Hitop., III, 109a. Pramāṇitam bhojanavyagram vyādhidurbhikṣapīḍi-  
tam

275. Pankapārṣujalaskandhavyastam śvāsaturam tathā  
prasuptam bhojane vyagram abhūmiṣṭham asarthithi-  
tam;<sup>191</sup> 660

276. Ghoragnibhayavitrastam vr̄ṣṭivatasamāhatam,<sup>192</sup>  
evamādiṣu jatiṣu vyasaneṣu samakulam  
svasainyam sadhu rakṣet tu, parasainyam vināsayet.<sup>193</sup>

277. Upayān sadganan mantram ṣatrop̄ svasyāpi cintayan  
dharmayuddhaiḥ kāṭayuddhairhanyat eva ripum sada.

278. Yane sapādabhṛtyā tu svabhṛtyān vardhayan nṛpaḥ  
svadeham gopayan yuddhe carmanā kavacena ca;

275. is troubled on the roads by much mud, dust and water, is  
also out of breath, is sleepy, is engaged in eating, has  
no proper place to stand upon, is in disorder;

276. is frightened by the fear of horrible fires, is heavily exposed  
to wind and rain, and is distressed by such existing  
calamities, he should well guard it; but he should  
destroy the army of his enemy, if it is in a similar state.

277. Considering the six-fold expedients and the design of his  
enemy and his own, he should surely always kill his  
enemy by fair and unfair fighting.

278. When the king gladdens his soldiers on the march with a  
quarter extra pay, protects his body in the battle  
with a shield and armour;

<sup>191</sup> See Kāmandakiya, XVIII, 51b and 52a.

Pankapārṣujalaklinnam vyastam puṣjikrtam pathi  
prasuptam bhojansvyagram abhūmiṣṭham asarthitham.

Hitop., III, 109.

Pramatitam bhojansvyagram vyadhidurbhikṣaptitam  
asarthitham abhūmiṣṭham vr̄ṣṭivatasamakulam.

<sup>192</sup> See Hitop., III, 108b. Ghoragnibhayavitrastam kṣutpipasarditam  
tatha, and Kāmandakiya, XVIII, 52b, Cauragnibhayavitrastam  
vr̄ṣṭivatasamāhatam.

<sup>193</sup> See Kāmandakiya, XVIII, 53.  
svasainyam sadhu rakṣeta parasainyam ca ghatayet.

279. Payayitvā madam sahyak sainikān śauryavardhanam  
nālāstreṇa ca khadgādyaiḥ sainiko għatayet arim. 560

280. Kunteṇa sādi bapena rathago gajago'pi ca  
gajo gajena yātavyah turageṇa turaṅgamah.

281. Rathena ca ratho yojyah pattinā pattir eva ca  
ekenaikaśca āstreṇa āstram astreṇa vāstrakam.

282. Na ca hanyāt sthalārūḍham na klibam na kṛtāśjalim  
na muktakēśam āśinam na tavāsmīti vādinam.<sup>194</sup>

283. Na suptam na visannāham na nagnam na nirāyudham  
na yudhyamānam paśyantam, yudhyamānam pareṇa ca.<sup>195</sup>

279. has made his soldiers drink up to a state of intoxication—  
the strengthener of bravery—; the soldier kills his enemy  
with a tubular instrument (*gun*), swords and other  
weapons.

280. A charioteer should be assailed by a lance, a person on a  
carriage or elephant by an arrow, an elephant by an  
elephant, a horse by a horse.

281. A carriage is to be opposed by a carriage, and a foot-soldier  
certainly by a foot-soldier, one person by another person,  
a weapon by a weapon, or a missile by a missile.

282. He should not kill a person, who is alighted on the ground, Who  
nor one who is emasculated, nor one who has joined should not  
his hands as a suppliant, nor one who sits with be killed.  
dishevelled hair, nor one, who says, "I am thine;"

283. nor one who is asleep, nor one without a coat of mail, nor  
a naked, nor an unarmed person, nor a combatant who  
is looking on, nor one who is fighting with another;

<sup>194</sup> See Manu, VII, 91; Nitiprakāśika, VII, 45; and Mahābhārata, Ra-

dharma, XCVI, 3, and XCVIII, 48a.

<sup>195</sup> See Manu, VII, 92.  
na yudhyamānam paśyantam na pareṇa samāgatam;  
and Nitiprakāśika, VII, 47.

284. Pibantam na ca bhuñjanam anyakaryakulam na ca  
na bhītam na parāvṛttam satām dharmam anusmaran.<sup>126</sup> 570

285. Vṛddho bālo na kāntavyo naiva stri kevalo nṛpah,  
yathāyogyam tu saṁyojya nighnan dharmo na hiyate.

286. Dharmayuddhe tu kūṭe vai na santi niyamā amī  
na yuddham kūṭasadrśam nāśanam balavadripoh.

287. Rāmakṛṣṇendradidevaik kūṭam evādṛtam purā ;  
kūṭenā nihato Bali Yavano Namuciḥ tatha. 575

288. Prabhullavadanenaiva tathā komalayā girā<sup>127</sup>  
ksuradharēṇa manasā ripoh chidram sulakṣayet.

289. Pañcasītisatānikāḥ senākaryam vicintayan  
sadaiva vyūhasaṅketavādyasābdāntavartināḥ  
sañcareyuh sainikaśca rājarāstrahitaisināḥ. 580

284. nor one who is drinking or eating, nor one engaged in another matter, nor one who is frightened, nor one who is running away; remembering the custom of the good.

285. Neither is an old man or a child to be killed, surely not a woman and especially not a king. If one kills, having fought in a suitable manner, no virtue is violated.

286. These restrictions exist in fair but not in unfair fighting, for the destruction of a powerful enemy there is no fighting like unfair fighting.

287. Unfair fighting was certainly observed by Rāma, Kṛṣṇa, Indra and other gods; Bali, Yavana and also Namuci were killed by unfair fighting.

288. With a cheerful face certainly and with a pleasing voice, but with a mind sharp as a razor he should always keep in view the vulnerable point of the enemy.

289. A king with 8,500 soldiers should study the working of an army, and the soldiers should always march, being well acquainted with the words (of command), the bugle-calls, sounds, signs, and military arrays, wishing for the welfare of the king and kingdom.

<sup>126</sup> See Manu, VII, 93b.

Rules how  
to drill an  
army.

290. Bheditām śatruṇā dṛṣṭvā svasenām ghātayet ca tām.  
 291. Pratyagre karmani kṛte yodhairdadyāt dhanam ca tān  
     pāritoṣyam vadhiκāram kramato' rham nṛpaḥ sada.  
 292. Jalānnatṛṇāśāfrodhaḥ śatrum sampidya yatnataḥ  
     purastat viṣame deśe paścāt hanyāt tu vegavān.         685  
 293. Kuṭasvarṇamahādānaśubhādayītvā dvīṣadbalam  
     nityavisrambhāsaḥsuptam prajāgarakṛtaśramam,  
     viloḍhyāpi parānikam apramatto vināśayet.  
 294. Kṣaṇam yuddhāya sajjeta kṣaṇam cāpaśaret punaḥ  
     akasmāt nipatet dūrāt dasyuvat paritaḥ sada.         690  
 295. Rūpyam hemaca kupyam ca yo yat jayati tasya tat<sup>107</sup>  
     dadyāt kāryānurūpam ca hr̥sto yodhān praharsayan.

290. A king having observed that his army has been won over  
     by the enemy, he should destroy it.  
 291. A king should always, after a fresh victory has been won Rewards  
     by his soldiers, give them a gratifying reward, and <sup>for sol-</sup>  
     ders deserving promotion in due order.  
 292. Having at first harassed the enemy in a hilly country by Harassing  
     cutting off water, food and grass, he should afterwards <sup>the economy.</sup>  
     vanquish him.  
 293. Having sown dissensions in the hostile army by great gifts  
     of counterfeit gold, and having deceived the (remaining)  
     inimical host, which is sleeping in complete security  
     and tired out by watches, a vigilant king should  
     destroy it.  
 294. At one moment he should endeavour to fight, at another  
     moment he should retreat again, he should suddenly  
     fall upon him from far, being always on every side,  
     like a robber.  
 295. The silver, gold and copper, which a soldier wins, belong to Concern-  
     him, and the king should eagerly, gratifying the warri- <sup>ing plun-</sup>  
     ers, bestow on them rewards according to merit.

296. Vijitya ca ripūn evam samādadyat karam tathā  
rājyāñśam vā sarvārjyam nandayeta tataḥ prajah. 595

297. Turyamangalaghōṣṇa svakiyam puram āviśet  
tatprajah putravat sarvāḥ palayetātmasātkrtaḥ.

298. Niyojayet mantrigānam sparam mantracintane  
dēse kāle ca pātre ca hyādimadhyāvasānataḥ  
bhavet mantraphalam kīḍk upayena katham tviti. 600

299. Mantryadyadhikṛtaḥ kāryam yuvarājya bodhayet  
pascat rājñe tu tāḥ sākam yuvarājo nivedayet.

300. Raja saṁsāsayet ādau yuvarājam tataḥ tu saḥ  
yuvarājo mantrigānanā rajagre te'dhikariṇah.

301. Sadasatkarma rājanam bodhayet hi purohitāḥ. 605

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296. Having thus conquered his enemy he should take tribute. Tribute.  
a part of the kingdom or the whole kingdom and  
gladden afterwards his subjects.

297. He should enter his town amidst the propitious sound of  
musical instruments, and he should protect all the  
people confided to him like sons.

298. He should appoint one set of ministers (for administration); Adminis-  
trative  
and another for the consideration of council, (to consider) and ex-  
ecutive  
according to place, time, and person, according to the officers.  
beginning, midst or end, what means should be adopted  
and what would be the result of the policy.

299. The prime minister should inform the crown prince of the Privy  
state of affairs, (and) the crown prince should together  
with these (ministers) afterwards impart it to the king. council.

300. The king should at first issue instructions to the crown  
prince, the crown prince should then in the presence of  
the king give commands to the boards of ministers, and  
these to their officers.

301. The priest should truly teach the king right and wrong. Priest.

302. Gramat bahiḥ samipe tu sainikān dhārayet sada  
grāmyasainikayorña syāt uttamarañdharmarnatā.

303. Sainikārtham tu panyāni sainye sandhārayet pr̄thak  
naikatra vīsayet sainyam vatsaram tu kadācana.

304. Senasahasram sajjam syāt ksanāt saṁśāsayet tathā      610  
saṁśāsayet svaniyamān sainikān aṣṭame dine.

305. Caṇḍatvam ātatātyitvam rajakārye vilambanam  
anisṭopekṣapam rajūnah svadharmaparivarjanam,

306. Tyajantu sainika nityam saṁhlāpam apicāparaiḥ,  
nr̄pājñaya vinā grāmam na viṣeyuḥ kadācana.      615

307. Svādhikārigaṇasyāpi hyasparādham disantu nah,  
mitrabhāvena vartadhvam svāmikārye sadākhilaib.

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302. The king should always place the soldiers outside the *soldiers*  
village but near; between villagers and soldiers there <sup>not to live</sup> <sub>in villages.</sub>  
should be no relation of creditor and debtor.

303. He should open separately bazars in the camp for the Bazaar.  
sake of the soldiers, and he should never let an army  
remain at one place a year.

304. A king should order that a troop of a thousand men be  
ready at a moment's notice, he should teach the soldiers  
his orders in eight days.

305. "Let the soldiers always avoid committing a rash act, a General  
murderous assault, delay in the service of the king, <sup>orders.</sup>  
overlooking what is disagreeable to the king, and  
neglect in the performance of their duties;

306. "Let them avoid having conversations with strangers; nor  
should they enter a village without the permission of  
the king.

307. "Let them communicate to us any mistake made by an  
officer or a man belonging to the rank and file; and  
may you always be while in the service of the king  
in a state of friendship with all.

308. Sajjvalanica rakṣantu ṣastrastravasanāni ca  
annam jalām prasthamūtram patram bahvannasādhakam.

309. Śāsanat anyathā cārāṇ vīneśyāni yamalayam  
bhedayitā ripudhanam gṛhitvā darsayantu mām.

310. Sainikairabhyaset nityam vyūḍhāyanukṛtim nr̥paḥ  
tathayaqe'yane laksyam astrapātaibhibbedayet.

311. Sayam prātaḥ sainikanām kuryāt saṅgaṇanam nr̥paḥ  
jatyākṛtvayodeśagrāmaवासनं विम्पया का.

312. Kalam bhṛtyavādhim deyam dattam bhṛtyasya lekhayet  
kati dattam hi bhṛtyebhyo vētānē pārītośikam,  
tat prāptipatram gṛhṇiyāt dadyāt vētanapatrakam.

313. Sainikāḥ śikṣita ye ye teṣu pūrṇa bhṛtiḥ smṛtā  
vynihābhyāse niyukta ye teṣvārdham bhṛtim avahet.

620

624

630

308. "Let them keep very clean the arms, projectile weapons  
and dress, the food, water, the vessel which holds a  
prastha-measure and in which much food can be  
prepared.

309. "I shall remove the soldiers who disobey these orders to the  
abode of Death. The soldiers disbanded for plunder  
should show me what booty they have taken from the  
enemy."

310. A king should always practise with his soldiers the  
manner of formations, and other military drills, and  
should likewise try every half year to pierce the target  
by discharging projectile weapons.

311. A king should every evening and morning muster his Muster.  
soldiers, having enquired into their caste, physique,  
age, country, village and station.

312. He should write down the time, the amount of pay, what Pay.  
pay has been given and is to be given, what present  
has been given to the soldier in his pay. He should  
take a receipt for it, and should give a pay-bill.

313. For the soldiers, who are disciplined, is mentioned full-pay;  
to those, who are undergoing instruction in military  
formations he should give half-pay.

314. Asatkartrāritam sainyam nāsayet śatruyogataḥ.  
 315. Nṛpasyāsadgunaratāḥ ke gunadveśino narāḥ  
     asadgupodāśināḥ ke hanyāt tān vimṛśan nṛpah,  
     sukhāsaktān tyajet bhṛtyān gupinopi nṛpah sadā.  
 316. Susvāntalokaviśvastā yojyāḥ tvantabhpurādiṣu  
     dharyāḥ susvāntaviśvasta dhanādīvyayakarmāṇi.     635  
 317. Tathā hi lokaviśvasto bahyakṛtye niyujyate  
     anyathā yojitāḥ te tu parivādāya kevalam.  
 318. Śatrusambandhino ye ye bhinnā mantrigānādayah  
     nṛpadurgupato nityam hṛtamānagunādikāḥ,  
     svakāryasādhakā ye tu subhṛtyā poṣayet ca tān.     640

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314. A king should destroy an army which is attached to an untrustworthy general, who is in collusion with the enemy.

315. A king, remembering those persons, who rejoice in his faults and hate his virtues, or who are indifferent to his faults, should kill them; servants who are devoted to pleasure he should dismiss, even if they are otherwise good. Treatment of servants.

316. Well disposed and popular persons should be placed in his harem and elsewhere; well disposed and reliable persons should be employed in the distribution of money, &c. Appointments how to be filled.

317. A person who has gained the confidence of the people should be likewise appointed to posts outside the palace, otherwise if incompetent persons were appointed, they would only bring on discredit.

318. He should support with good pay the group of ministers creating dissensions in the enemy's camp, and other officers, who will serve his interests, and who while actually in the service of the enemy are disaffected, and who have lost their pride, virtue, and other good qualities through the badness of their king. Creating dissensions in the enemy's camp.

319. Lohhenā' sevanāt bhinnāḥ teṣvārdhām bhṛtim āvahet  
śatrutyaktān suguṇinah subhṛtya pālayet nṛpaḥ.  
320. Pararūḍre hṛte dadyat bhṛtim bhinnāvadhim tathā  
dadyat ardham tasya putre striyai pādamitām kila. 645  
321. Hṛtarājyasya putrāśau sadguṇe pādasammitam  
dadyat vā tadrajyatastu dvātrīṁśāhām prakalpayet.  
322. Hṛtarājyasya nicitam kośam bhāgartham aharet.  
323. Kausidam vā taddhanasya pūrvoktardham prakalpayet,  
taddhanam dviguṇam yāvat na tat tardhvam kada-  
cana. 650  
324. Svamahatvadyotanārtham hṛtarājyan pradhārayet  
prāhmānsairyadi sadvṛttān duryṛttastu prapīdayet.

319. The king should give half pay to those who are gone away (and have come back) from greed and disregard ; he should provide excellent persons who have left the enemy, with good pay.

320. If the kingdom of an enemy has been taken, he should give him pay from the time of the deposition ; half the amount he should give to the son, a quarter surely to the wife. What to give to a vanquished king.

321. He should give to the son or other relation of a dethroned prince, if he is very good, a fourth part of the income from the kingdom, or he may assign to him the thirty-second part of the kingdom.

322. He should take for his own share the unassisted treasure of the dethroned prince.

323. Or he may fix on the dethroned prince the interest accruing from the treasure, i.e., the above mentioned portion ( $\frac{1}{4}$ ), till the total sum (received by him) is double the amount of the treasure.

324. He should maintain well the dethroned princes for the glory of his own greatness, if they are good with the honors formerly enjoyed by them ; but if bad, he should suppress them.

325. Aṣṭadha daśadhā vāpi kuryāt dvādaśadhapi vā  
yāmikārtham ahorātram yāmikān vikṣya nānyatha.

326. Ādau prakalpitān aṁśān bhajeyuryāmikāstathā  
adyah punastvantiṁśām svapūrvāṁśām tato'pare. 655

327. Punarvā yojayet tadvat adye'ntyam cāntime tataḥ  
svapūrvāṁśām dvitiye'hni dvityādiḥ kramāgatam.

328. Caturbhyastvadhikān nityam yāmikān yojayet dīne  
yugapad yojayet dr̥ṣṭvā bahūn vā kāryagauravam.

329. Caturūnān yāmikānstu kada naiva niyojayed.

330. Yadrankṣyam upadeśyam yat adeśyam yāmikāya tat  
tat samaksam hi sarvam syāt yāmiko'pica tat tathā. 660

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325. For the sake of the watchmen he should divide night and Watch-day into eight, ten or twelve watches, having previously looked at the (the number of the) watchmen, not otherwise. men.

326. The watchmen will also share (amongst them all) the originally fixed watches; the first watchman will again take the last watch, and each of the others will take the watch of his predecessor.

327. Or he may also appoint as before the last watchman to the first and last watch; the second watchman and the others should in due order obtain on the second day, &c. the watch of the first watchman.

328. He should always appoint every day more than four watchmen, or on some occasions having seen that the work is heavy, he should appoint many.

329. He should never appoint less than four watchmen.

330. The watchman should be told what is to be guarded, and what is to be communicated; all should be before his eyes, and the watchman should do it accordingly.

331. Kīlakōṣṭe tu svarṇādi rakṣet niyamitāvadhi  
svāṁśānte darsayet anyayāmikam tu yathārthakam. 665

332. Kṣane kṣane yāmikanām kāryam dūrāt subodhanam.

333. Satkṛtān niyamān sarvān yadā sampādayet nṛpaḥ  
tadaiva nṛpatih pūjyo bhavet sarvesu nānyathā.

334. Yasyāsti niyatam karma niyataḥ sadgraho yadi  
niyato'sadgrahatyāgo nṛpatvam so'śnute ciram. 670

335. Yasyāniyamitam karma saṁdhutvam vacanam tvapi  
sadaiva kūtilah syāt tu svapadāt drāk vinaśyati.

336. Nāpi vyāghragajah śaktā mrgendram śāsitum yathā  
na tathā mantrinah sarve nṛpam svacchandagāminam.

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331. He should up to the appointed time guard the gold and other things in the bolted treasury, (and) at the end of his watch he should show the amount of the treasure to another watchman.

332. There should be kept continually from a distance a good lookout on the watchmen.

333. If a king should succeed in having all his orders well executed, he will surely be honoured among all men, by a king enjoyed respect but not otherwise.

334. The king, who is steady at his work, shows kindness to good people and discountenances bad persons, enjoys his kingdom for a long time.

335. The king, who is unsteady in his work, good behaviour and speech, and who is always deceitful, disappears soon from his throne.

336. As tigers and elephants even are not able to govern the lion, thus also all ministers are not able to govern a king, who goes on as he likes.

337. Nibhṛtā dhikṛtastena nissāratvam hi teṣvataḥ  
gajo nibadhyate naiva tūlabhārasahasrakaiḥ. 675

338. Uddhartum drāk gajāḥ ṣaktāḥ pañkalagnagajam bali,  
nitibhrajanṛpam tvanyanṛpa uddhārapakṣamah.

339. Balavanurpabhrtye' lpe' pi śrīḥ tejo yathā bhavet  
na tatha hinanṛpatau tanmantriśvapi no tathā.

340. Bahūnām aikamstyam hi nṛpaterbalavatteram  
bahusatrakṛto rājjuḥ sīnhadyakarṣaṇakṣamah.

341. Hinārājyo ripubhrtyo na sainyam dhārayet bahu,  
kośavṛddhim sadā kuryāt svaputrādyaśabhvivṛddhaya.

342. Kṣudhayā nīdrayā sarvam aśānam śayanam śubham  
bhavet yathā tathā kuryāt anyathāśū daridrakṛt. 680

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337. By the king are humbled and censured the ministers,  
among them is therefore surely weakness ; an elephant  
is not bound even by 1,000 loads of cotton

338. A strong elephant is able to draw out quickly another  
elephant who sticks in the mud ; a king is only able to  
reform an iniquitous king.

339. Even if the servants of a mighty king are insignificant  
there may be power and splendour ; but it will not be  
the same with a weak king, even if his ministers are  
not so.

340. The unanimity of many makes a king very strong ; a  
rope made of many strings is able to drag a lion and  
other beasts.

341. A king whose kingdom is reduced and who has become a dependent of his enemy should not maintain a large army, he should always increase his treasure, for the recovery of power by his son and descendants. A weak kingdom how to strengthen

342. He should so work that through hunger and sleepiness every kind of food and couch becomes agreeable, otherwise he will soon become poor.

343. Diśānaya vyayam kuryat nṛpo nityam na cānyathā.  
 344. Dharmalitivihina ye durbala api vai nṛpah,  
     sudharmabalayugrajña dandyāste cauravat sada.  
 345. Sarvadharmaśāṇat nicanrpo'pi śresthatām iyāt  
     uttamo'pi nṛpo dharmāśāṇat nicatām iyāt.      699  
 346. Dharmādharmaśāṇat tu nṛpa eva hi kāraṇam  
     sa hi śresthatamo loka nṛpatvam yaḥ samāpnuyāt.  
 347. Manvādyairāḍte yo'rthaḥ tadarthaḥ Bhārgavēṇa vai,  
     dvāvimeśatīśatam āloka nitiśare prakīrtitāḥ.      705  
 348. Śukroktanītiśāram yaḥ cintayet aniśam sada  
     vyavahāradhuram vodhūm sa ākto nṛpatirbhavet.  
 349. Na kaveḥ sadṛśi nīlī triṣṭu lokaśu vidyate  
     kāvyaiva nitiranya tu kunitirvyavahāriṇām.

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343. A king should always spend in this manner, not otherwise.  
 344. Those kings who are surely deficient in righteousness and good behaviour, and are also weak, should be punished by a strong and righteous king, like thieves.  
 345. A lowbred king even may obtain excellence by the protection of righteousness, while a king of the highest caste may be ruined through the suppression of righteousness.  
 346. A king is surely the cause for the prevalence of right and wrong; he who obtains kingship is surely the very best in the world.  
 347. This matter concerning worldly prosperity which was respected by Manu and others was also surely respected by Bhārgava; 2,296 double verses are told in his essence of polity.  
 348. He who would always consider the essence of polity Excel-  
     spoken by Śukra, may become a king capable of bear-  
     ing the burden of administration.      705  
 349. Such a polity as that of the Poet (Śukra) is not known in the three worlds. The Polity (proposed) by the Poet is (good) polity, any other polity among men is bad polity.

350. Nāśrayanti ca ye nitim mandabhagyāstu te nṛpah, 700  
 kātaryāt dhanalobhāt vā syurvai narakabhājanāḥ.

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350. Those unfortunate princes, who out of cowardice or  
 cupidity do not have recourse to this polity, will surely  
 have their share in Hell.

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## SCHEME OF TRANSLITERATION.

		Consonants.	Vowels.	Diphthongs.
Gutturals	..	.. k kh g gh n h b	a å	e ai
Palatals	..	.. c ch j jh ñ y ñ	i i	
Linguals	..	.. t ð ðh ðh n r s	r ð	
Dentals	..	.. t ð dh ðh n l s	l	
Labials	..	.. p ph b bh m v ñ	u ö	o au
<hr/>				
Anusvāra	..	.. ū (real), ṻ (unreal); Avagraha '.		

## APPENDIX.

## IDENTIFICATION OF THE MANIPURA OF THE MAHĀBHĀRATA WITH MANIPURA OR MANALŪRU OR MADURA IN SOUTH INDIA.

On a previous occasion (pp. 66 and 67) we mentioned the city of Manipura as a place to which the *Mahābhārata* according to Mr. Talboys Wheeler ascribes fortifications provided with firearms.

This Manipura is declared by Mr. Wheeler to be the modern "Munnipur in the extreme east beyond the Bengal frontier . . . a secluded valley lying between Eastern Bengal and Burmah; and the people appear to be a genuine relic of the ancient Nagas."<sup>199</sup>

The late Professor Christian Lassen, by far the greatest authority on matters connected with Indian Archaeology, inclines to place it on the Eastern Coast of India south of Chittagong at the mouth of the *Längulya* river, identifying it with a locality he calls Manphur-Bunder.<sup>200</sup>

In order to fix the locality of Manipura it is necessary to follow Arjuna on his journey as described in the first book of the *Mahabharata*.<sup>201</sup> Arjuna goes first to the North, reaches the Ganges, bathes in the holy river, and meets here the fair Ulupi, with whom he stays for some time. He visits all the holy places in Anga, Vanga, and Kalinga. Pursuing his road to the South along the Mahendra mountains, he crosses Kalinga, goes along the coast and reaches Manipura. Here

<sup>199</sup> See History of India, I, 144, 149, 421 and elsewhere.

<sup>200</sup> See Indische Alterthumskunde, I, 676, 677, (563). 2nd Note "der Name scheint im Manphur-Bunder, erhalten zu sein, welches bei Cikakul nahe bei Koringapatam liegt."

<sup>201</sup> See *Mahabharata*, Adiparva, Chap. 174, 176; *Bharatacampū*, III. *Stavakā*; Oriental Hist. MSS. Vol. I, 225, 226.

reigned the king Citravishnu, who had an only daughter Citrangada. Arjuna demanded her in marriage, after having made himself known. The king did not object to this request, but demanded that, as Citrangada was his only child,—for no Raja of Manipura had ever had or would have more than one child,—the son born to Arjuna by his daughter should become king of Manipura. To this Arjuna consented and a son, Bahruvahana, was born to Citrangada, and after Arjuna had staid for three years in Manipura, he left it, turned towards the Western Coast, wandered along it to Gokarna, and finally met Kṛṣṇa at Dvāraka. In the horse sacrifice Arjuna came once more to Manipura, fought with, and was killed by, his son Bahruvahana, but was revived through the life-restoring jewel.

Deciding on the evidence before us as taken from the *Mahābhārata*, Mr. Wheeler's identification of the ancient Manipura with the modern Munnipur falls to the ground, and with it all his explanations of the significance of this myth. That the stories concerning Arjuna's journey to Manipura should be known among the Munnipurees of our days, and that they should claim to be the descendants of the inhabitants of ancient Mapipura<sup>262</sup> need not astonish anybody. By this time the contents of the *Mahābhārata* are pretty well known all over India and its bordering states, and the Munnipurees do not stand alone in arrogating to themselves historical fame by taking advantage of the resemblance of names. There exist in India many places called Manipura.

Equally wrong, though less objectionable, is the conjecture of Lassen. There does not exist near Chiccole a place called Manphur-Bunder. The name of the town he thought of is not Manphur-Bunder, but Maṭṭa-Bandar. It lies on the left bank of the Laṅgulya river near the sea, and is a comparatively modern place, as its name, which is a mixture

<sup>262</sup> See *History of India*, I. p. 149.

of Arabic and Persian words, clearly indicates. Mafus Bandar (माफुस बन्दर) should be properly transcribed *Mahfuz Bandar* (مَحْفُظ بَنْدَر), which means a *secure harbour*, serving once probably Chicacole (*Srikuvalam*) for such a purpose. Professor Lassen anxious to find a place on the north-eastern coast of the Dekkan which he could identify with Manipura, the capital of Babhruvahana, fixed on Mafus Bandar, mistaking *Mahfuz* for *Masphur* (*Manipura*) most likely in consequence of a wrong application of the diacritical points over two letters. It may here be remarked that the originally Persian word *Bandar* is quite commonly used in Telugu, in the meaning of *harbour*, thus, e.g., Masulipatam is generally called Bandar. The reason of this fact is that the seafaring population are mostly Muhammedans, the Arabs being in former times great navigators in these parts of the world.<sup>202</sup>

I believe that Professor Lassen was to a great extent induced to fix Manipura so far north, by limiting too much the extent of the Mahendra-mountain range, which he opined to be a particular mountain situated in Kalinga, and starting from those premises he went so far as to declare that the country Kalinga was wrongly mentioned in the *Mahābhārata*, as the region which, together with Anga and Vanga, Arjuna has passed through on his journey. The name *Mahendra* can apply to all the mountains near the Eastern Coast, including the Eastern Ghāts as well as the mountains near the sea of Bengal in the utmost south. Indra is the regent of the East, and the whole Eastern Coast is under his protection; a mountain near Rajamandry in the north is called *Rājama-hendra* and the highest and most southern mountain in India bears the name *Mahendragiri*.

In the *Ramayana* Hanumān is said to have jumped from

<sup>202</sup> North of Visianagram lies inland a place called *Munipuripetts*.

the Mahendra mountain to Ceylon (Lanka). This exploit would have been somewhat more difficult if Hanumān had to jump from Mafusbandar to that island; as he would have been obliged to leap into the dark, for he could hardly see Ceylon from a place near Chicacole<sup>204</sup>.

The mountain from which Hanuman is said to have jumped to Ceylon, bears to this day the name *Mahendragiri*. It is the same hill, near which the fierce warrior sage Paraśurāma lived. This *Mahendragiri* is the highest and most prominent peak north of Cape Comorin. It is 5,430 feet high and serves the sailors as a land mark; on its southern side lies the town Pannagudi.

On the east of the south part of the Eastern Ghāts, which is called there by the inhabitants also *Mahendra*, lies Madura, and a few miles still further east lies *Mapaluru*. It may be here remarked, that *Mapaluru* or *Mapipura* lay formerly much nearer to the sea, as India has increased considerably on this side of the coast. In old legends we read, that the sea encroached on some occasions to the walls of *Madura*.

The Sanskrit name of this *Mapaluru* is *Manipura*, and as such it was the capital of the ancient *Pāṇḍya* kingdom. *Kulaśekhara Pāṇḍya* is mentioned both in Tamil and Telugu records as the founder of *Manipura*, which was otherwise known by the name of *Maṇaluru*. The local traditions all coincide on this point. *Manipura* or *Maṇaluru* was the original site of the capital of the *Pāṇḍya* kings, which was afterwards transferred to *Madura* in its immediate neigh-

<sup>204</sup> See *Ramayana Kiskindhakanda*, LXVII, 40—43.

40. Aruroha nagastreṣṭham mahendram arimardanab.

43. Viñovatra hariṣṭreṣṭho mahendrasaṇavikramab.

Ibidem, *Sundarakanda*, I, 15, 213, 214.

*Ramayanasangraha*, *Sundarakanda*, I, I.

1. Tato Mahendrasikharat utplutya Hanuman bali  
surasādīshike bhittva Lashkabahiravatarat.

*Mahanātaka*, *Sundarakanda*, I, 14, 15, 126, 127.

bourhood.<sup>205</sup> In some chronicles Mapipura is also called Kalyānapura; the proposed identification of Kalyānapura with Kurkhi is quite without foundation.

Occasional excavations round Mapaluru have brought to light substantial evidences of ancient structures, especially in the fields of Mapaluru Cintāmaṇi, midway between the present Mapaluru and Madura; old coins and ancient gold ornaments have also been found there in quantities. The neighbouring country round Mapaluru stands among the natives in the reputation of containing many hidden treasures, and people often try to find them by means of the wand.

It is a most important coincidence that in some old MSS. of the Mahābhārata, instead of the name Manipura, the chapters of the Asvamedha, which should contain it, give actually the name Mapaluru.<sup>206</sup>

In the "Oriental Historical Manuscripts" of the Rev. Mr. Taylor occurs, instead of Mapaluru the name Manavuru, but from further evidence given by Mr. Taylor himself, both names apply to one and the same place.<sup>207</sup> In some chronicles Madura is substituted for Manipura, and Arjuna is said to have married the daughter of the Pāndya king of Madura.<sup>208</sup>

<sup>205</sup> See Tamil Kadjan MS. No. 2327 in the Government Oriental MSS. Library ibidem, Local Records XLVII, 105: "Madurasamipamandanna Mapiparam anaga Mapaluru candravahnam Kulasekhara pādodyuṣa rajyaparipalana, saty. 4,100." According to some Kulasekhara himself transferred the capital from Manipura to Madura.

<sup>206</sup> See Asvamedha, LXI, 1-3; LXVII, 1; LXVIII, 1; LXIX, 1.

LXI. 1. Kraṇeṇa saha yaśtrevaṁ vicāraṇa Bharatāśabha  
Mapalurupaterdeśam upāyat saha Pāṇḍavaiḥ.

2. Śrutiḥ tu nṛpativitvam pītām Babbhruvāhanāḥ  
niryayau vinayenātryo brahmaṇārghyapurassarāḥ.  
3. Mapalurēśvaram caivam upāyāniṁ dhanāñjayaḥ.

LXVII. 1. Puṣtarasya mahābhago Mapalurēśvara yuva.

LXVIII. 1. Prayopavīte nṛpatās Mapalurēśvare tatha.

LXIX. 1. Kim agamanakṛtyam te Kauravyakulanandini  
Mapalurēśvatasasya tathāiva caranajira.

<sup>207</sup> See Oriental Historical Manuscripts, by William Taylor, Missionary, I, 18, 57, 120.

<sup>208</sup> See Ibidem, p. 122.

The adventures of Arjuna during his exile have always been a subject of great interest among the Indians, and many of his exploits have gained for him a favorite place among the Pāṇḍava heroes.

Especially his journey to Manipura has been largely commented upon, as through his stay at that place and his marriage with the crown-princess Cītrāṅgada, the family of the Pāṇḍyas became united with that of the Pāṇḍavas.

Cītravāhana and his grandson Babhruvāhana are frequently mentioned as Pāṇḍyas as well in old as in more modern records, and on this point they are unanimous. Mr. Nelson, the able compiler of the Manual of the Madura District, is by far too positive, when he says that in the *Mahābhārata* no mention is made of Arjuna having married a Pāṇḍya princess; for there exist copies which contain such an account.<sup>209</sup>

The fame and power of the Pāṇḍavas must have spread all over India and beyond it, for the conqueror of Ceylon, Vijaya, belongs also to this family.

Whether the connection of the Pāṇḍyas with the Pāṇḍavas was a real one, or whether it was only assumed by the former to invest themselves with greater authority and to raise their position in the eyes of the people is now difficult to find out, but the belief in such connection is a matter of fact.

According to a chronicle quoted by Mr. Taylor the Pāṇḍya kings were descended from Yayati, the son of Nahusa. Yayati had two sons by Devayāni, the daughter of Uśanas, Yadu and Turvāsa (Turvasu). "The younger brother of Yadu (*i.e.*, Turvāsa) was the first Pandian. The place of his reigning was Manalur. Among those of this race, one, named Kulaśeghara Pandian, by the favor of Śiva, cut down a forest of Kadambu trees, and built a town called Madura, where he lived."<sup>210</sup>

<sup>209</sup> See Manual of the Madura District, by J. H. Nelson, M.A., III, 49.

<sup>210</sup> See Oriental Historical Manuscripts, I, 120.

We thus see, if the legend just narrated rests on any authority, that Manipura or Manaluru through its king, who was a son of daughter of Śukra, is connected with Śukrācarya,—the presumed author of the *Sukranīti*, and the expounder of the fabrication of gunpowder and the construction and handling of guns,—is the same Manipura, of which we have read in the *Mahābhārata*, that it was provided with firearms and guns against the attack of its enemies. If Manipura is the place which corresponds to the site of Manipura (Manaluru) near Madura, a great many otherwise inexplicable contradictions are easily solved.

The affection with which the Pandavas are remembered in India, and especially in the South, seems to me not only due to the interest which the story of their sufferings, their bravery, and final victory excited everywhere, but also to some cause by which their memory was effectually kept alive.

There are no monuments of great antiquity in Southern India, especially on the Eastern Coast, with which legendary lore does not somehow connect the name of the Pandavas. Thus we observe that their name is associated with the rock-cut caves in Māmāndūr near Conjeveram, and the same occurs in many other places, perhaps also at the rock temples of Kalugumalai.

The famous Seven Pagodas near Madras, whose carvings are celebrated all over India, do not form an exception to this rule. The monoliths representing rathas (cars) or shrines named after Dharmarāja, Bhīma, Arjuna, Nakula and Sahadeva, and even to Draupadi, are among the most ancient of the carvings. Arjuna especially is a favorite; there are two rathas named after him, though one of them contains now an image of Ganeśa, and the most splendid carving, of which there exist also two copies, though one is in an incomplete state, is called Arjuna's penance. We must not forget that Arjuna is the presumed ancestor of the Pāṇḍyas.

I believe that these and other such carvings originated with the Pāndya princes, who, by honoring their ancestors, conferred still greater distinction on themselves. A reigning dynasty alone could have undertaken the construction of such works. The assumption that these carvings originated with the Pāndyas, under whose sway for some time the whole Eastern Coast remained, does not contradict any historical statement especially as the reign of the Pāndya kings extended over a long period.

The execution of these sculptures is generally ascribed to the architectural energy of Buddhists and Jains, but there is nothing against the assumption that the Pāndyas may have once also followed the religious tenets of the Buddhists and Jains and supported their co-religionists in the same manner in the South as the Maurya Kings of Pātaliputra did in the North.

If this hypothesis can be proved to rest on historical evidence, we shall perhaps be able to settle before long the date of the construction of these rock carvings in a more satisfactory manner than has been done up to this day.

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